

# **Appendix A**

## **Scoring System**

## Appendix A

### Scoring System

#### **Overview**

The general approach for developing the ranking method was to identify a set of primary criteria for evaluating chemicals, and then examining the subcriteria that could be used to compose a score for each primary criterion. Scores for each subcriterion are rolled up to generate a score for each primary criterion, and the primary criteria scores are rolled up to generate the total chemical score. Chemicals are then ranked based on the total score.

Four primary criteria were selected for the ranking method. Subcriteria were then determined for each criterion. Subcriteria were developed in a manner that would allow a quantitative score to be derived for each. Since subcriteria generally were not amenable to fine scoring, it was decided that scoring for subcriteria should generally be on a discrete scoring scale rather than a continuous scale. In other words, a chemical's score for any given criteria would be a whole number within a predefined range, such as 0, 1, 2, 3. This was felt to be appropriate since it prevents data with extremes from dominating the analysis (e.g. in a continuous scale based on quantities ranging from 1 to 100,000 pounds, a chemical reported with a quantity of 100,000 pounds may not be considered of 100 times greater concern than a chemical with reported quantity of 1,000 pounds). A log scale scoring method where the score is based on the log of the data of interest was considered. This was not used, however, because a factor of 10 increase at the low end of the scale scores the same as a factor of 10 increase at the high end of the scale. For example, in a base 10 log system for quantity, the difference between 100 pounds and 1,000 pounds is one point ( $\log(100) = 2$ ,  $\log(1000) = 3$ ), and the difference between 10,000,000 pounds and 100,000,000 pounds is also 1 point ( $\log(10,000,000) = 7$ ,  $\log(100,000,000) = 8$ ). In the first case the 1 point difference corresponds to a 900 pound difference, while in the second case the 1 point difference corresponds to 90,000,000 pounds.

Scores for each subcriteria were determined based on either 1) the presence or absence of a chemical from a list or set of lists, or 2) the number or quantity associated with a chemical for a specific factor. Where a subcriterion score is based on a number or quantity, discrete scores were assigned to ranges of values ("bins"), as shown in Tables A-1 and A-2. For example, for the National Sediment Inventory (NSI) data, scoring was based on the number of times a chemical was detected at Tier 1 and Tier 2 sites. If a chemical was detected at 1300 sites in the NSI it would receive a score of 3.

#### **Scoring Fencelines**

The values associated with the boundaries between scores are also referred to as "fenceline" values. For example, for the National Sediment Inventory, the value of 100 sites is the "fenceline" between a score of 1 and a score of 2 for this subcriterion. Due to the scoring approach, a chemical that has a value just below the fenceline value will get a lower score than one just above the fenceline, even though the difference in quantity value between the two chemicals may be relatively small. For example, a chemical reported at 100 sites would score a 1

**Table A-1. Subcriteria Scoring for Environmental Presence**

<b>Sub-criterion</b>	<b>Value Range</b>	<b>Score</b>
<i>National Sediment Inventory</i>		
	Chemical not on list	0
	1 - 99 detections	1
	100 - 999 detections	2
	>999 detections	3
<i>Fish Advisory Database</i>		
	No advisories in database	0
	1 - 9 advisories	1
	10 - 99 advisories	2
	>99 advisories	3
<i>ATSDR HazDat Database</i>		
	No current sites in database	0
	1 - 99 sites	1
	100 - 499 sites	2
	>499 sites	3

while a chemical reported at 101 sites would score a 2. Consequently, the discrete scoring approach introduces a degree of “graininess” into the ranking that would not exist with a continuous scoring scale.

In general, a scoring range of 0 to 3 was used as the basis for subcriterion scoring, with fencelines selected in order to create 4 “bins” of scores corresponding to scores of 0, 1, 2, and 3. Fencelines for each data set were selected based on judgement by reviewing histograms of the data and considering of the following factors:

- natural “breaks” in the data where data ranges containing a number of chemicals are divided by ranges containing few or no chemicals;
- ranges that would create groupings of roughly equal numbers of chemicals; and
- relative significance of the values encompassed by range (e.g. a chemical generated in an annual quantity of only a hundred pounds would be considered substantially less significant than a chemical generated at a quantity of 1 million pounds, other factors being equal).

Figures A-1 through A-9 provide histograms for the data where quantified factors were used as the basis for developing a subcriterion score. Explanations for selection of fenceline selection is provided below.

**Table A-2. Subcriteria Scoring for Quantity/Prevalence**

Sub-criterion	Value Range	Score
<i>TRI chemical quantity (lbs)</i>		
<1	0	
1 - 1,000,000	1	
1,000,000 - 10,000,000	2	
>10,000,000	3	
<i>TRI number of generators</i>		
0	0	
1-9	1	
10 - 99	2	
> 99	3	
<i>NHWCS chemical quantity (lbs)<sup>1</sup></i>		
<1	0	
1 - 100,000	1	
100,000 - 1,000,000	2	
>1,000,000	3	
<i>NHWCS number of handlers<sup>1</sup></i>		
0	0	
1-4	1	
5-10	2	
>10	3	
<i>BRS waste quantity (tons)<sup>2</sup></i>		
<1	0	
1 - 10,000,000	1	
10,000,000 - 100,000,000	2	
>100,000,000	3	
<i>BRS number of generators</i>		
0	0	
1-999	1	
1000 - 9,999	2	
>9,999	3	

<sup>1</sup> NHWCS data is only used for those chemicals not reportable in the TRI.

<sup>2</sup> Chemicals not listed in the Chemical Crosswalk table were not evaluated on the BRS-based criteria.

*National Sediment Inventory (NSI).* Chemicals not in the NSI were given a score of 0. 115 chemicals from the Candidate Chemical List were found in the NSI. Data on the number of detections at Tier 1 and Tier 2 sites showed breaks at values of 100 and 1000. Numbers of

chemicals in each grouping were 58 chemicals in the 1-100 grouping, 31 chemicals in the 101 - 1000 grouping, and 26 chemicals in the >1000 grouping. This distribution of scores was considered reasonable.

*Fish Advisory Database.* Chemicals not in the Fish Advisory Database were assigned a score of 0. Only 45 chemicals were found in the Database. Data on the number of advisories indicated most chemicals had 8 or fewer advisories. Based on breaks in the data, the ranges of 1-9 (37 chemicals), 10 - 99 (5 chemicals), and > 99 (3 chemicals) were selected.

*ATSDR HazDat Database.* Chemicals not in HazDat were assigned a score of 0. 77 chemicals from the Candidate Chemical List were found in HazDat. Most chemicals were reported at fewer than 25 sites. Groupings were set at 1 - 99 sites (69 chemicals), 100 - 499 sites (44 chemicals), and >499 sites (15 chemicals).

*TRI Chemical Quantity.* All chemicals with a reported quantity in the TRI (110 chemicals) were scored based on their TRI chemical quantity. Chemicals reported in quantities <1 pound (4 chemicals) were scored a zero. Other scoring ranges were 1 - 1,000,000 pounds (54 chemicals), 1,000,000 - 10,000,000 pounds (26 chemicals), and >10,000,000 (26 chemicals).

*TRI Number of Generators.* Chemicals with less than <1 reported generators were given a score of 0 (0 chemicals). Other scoring ranges were selected based on judged significance in scoring range differences. These were set at 1 - 9 generators (49 chemicals), 10 - 99 generators (35 chemicals), and > 99 generators (26 chemicals).

*NHWCS Chemical Quantity.* For any chemical not reported in TRI, the NHWCS was used to estimate chemical quantity generated. Since TRI and NHWCS quantities were determined on a different basis, different quantity ranges were used for scoring. Since there were relatively few chemicals for which the NHWCS was used to determine the quantity (i.e. that were not reported in the TRI), the histogram was developed based on all Candidate Chemical List chemicals reported in the NHWCS (114 chemicals). Chemicals reported in quantities <1 pound (6 chemicals) were scored a zero since this was considered a minimal quantity. Other scoring ranges were set at 1 - 100,000 pounds (54 chemicals), 100,000 - 1,000,000 pounds (19 chemicals), and >1,000,000 (33 chemicals).

*NHWCS Number of Handlers.* For any chemical not reported in TRI, the NHWCS was used to estimate number of waste handlers. Since TRI generators and NHWCS waste handlers were determined on a different basis, different ranges were used for scoring. Since there were relatively few chemicals for which the NHWCS was used to determine the quantity (i.e. that were not reported in the TRI), the histogram was developed based on all Candidate Chemical List chemicals reported in the NHWCS (106 chemicals). Ranges were selected based on judgement, breaks in the data, and to balance the number of chemicals in groupings. These ranges were 1 - 4 handlers (58 chemicals), 5-10 handlers (20 chemicals), and >10 (35 chemicals).

*BRS Waste Quantities.* Those chemicals in the Chemical Crosswalk list were scored on the basis of the BRS waste quantities associated with the chemical. Chemicals associated with <1 ton of RCRA waste were scored as 0. Other ranges were selected based on breaks in the data and

on orders of magnitude. These were 1 - 10,000,000 tons (16 chemicals), 10,000,000 - 100,000,000 tons (89 chemicals), and >100,000,000 (2 chemicals).

*BRS Number of Generators.* Those chemicals in the Chemical Crosswalk list were scored on the basis of the BRS waste generators of wastestreams associated with the chemical. Chemicals associated with wastestreams reported by <1 facility were scored a 0 (13 chemicals). Other ranges were based on order of magnitude and breaks in the data. These ranges were 1 - 999 generators (59 chemicals), 1000 - 9,999 generators (22 chemicals), and 9,999 generators (26 chemicals).

In a separate analysis fenceline values were varied to determine whether relatively small adjustments in the selected values had a significant affect on the overall ranking of chemicals. Fencelines for quantity/prevalence factors were modified to force equal numbers of chemicals in each scoring bin. This was found to have only a mild affect on the overall chemical ranking (RTI 1998c).

### EPA National Sediment Inventory Histogram

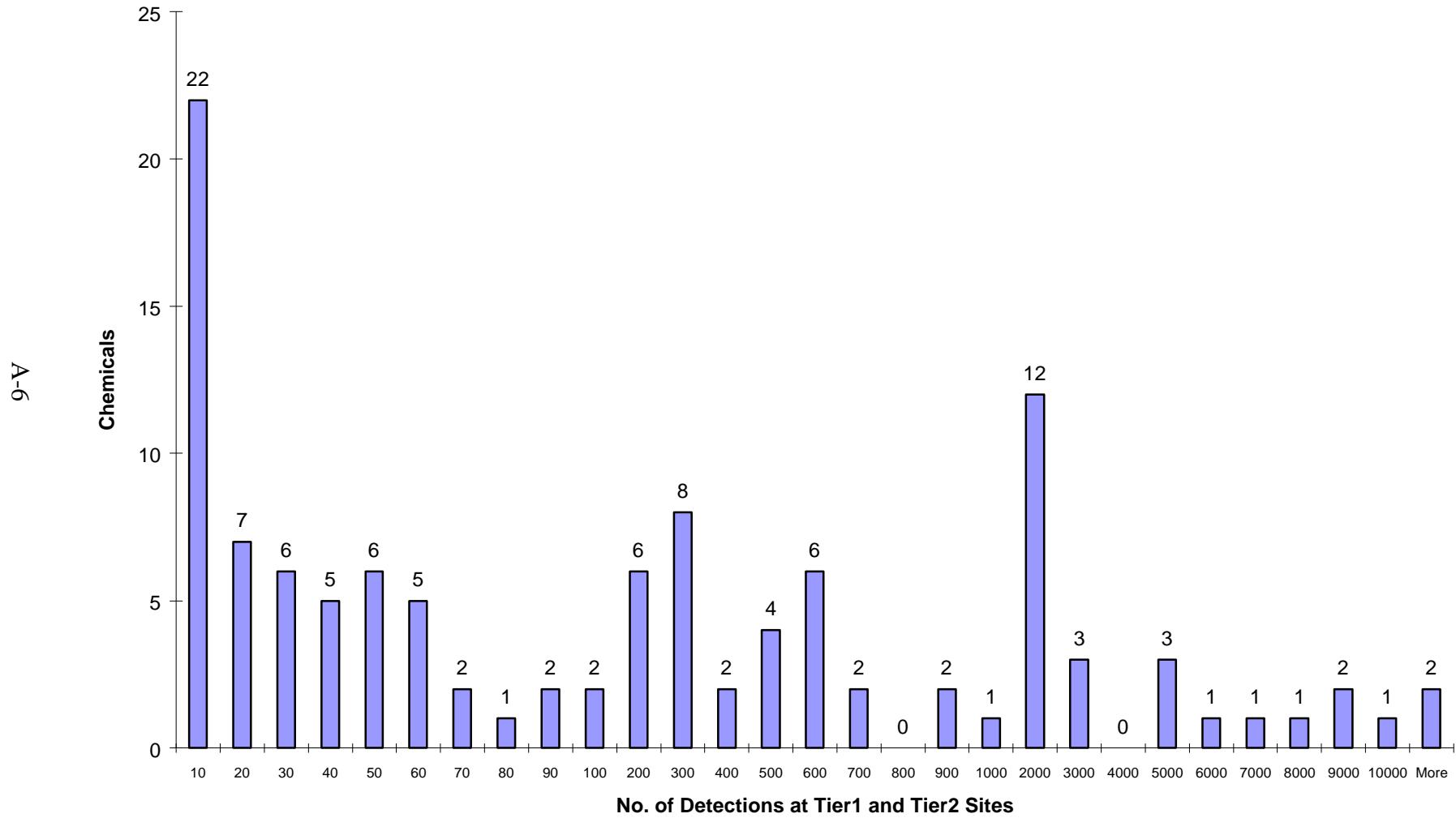


Figure A-1

### Fish Advisory Histogram

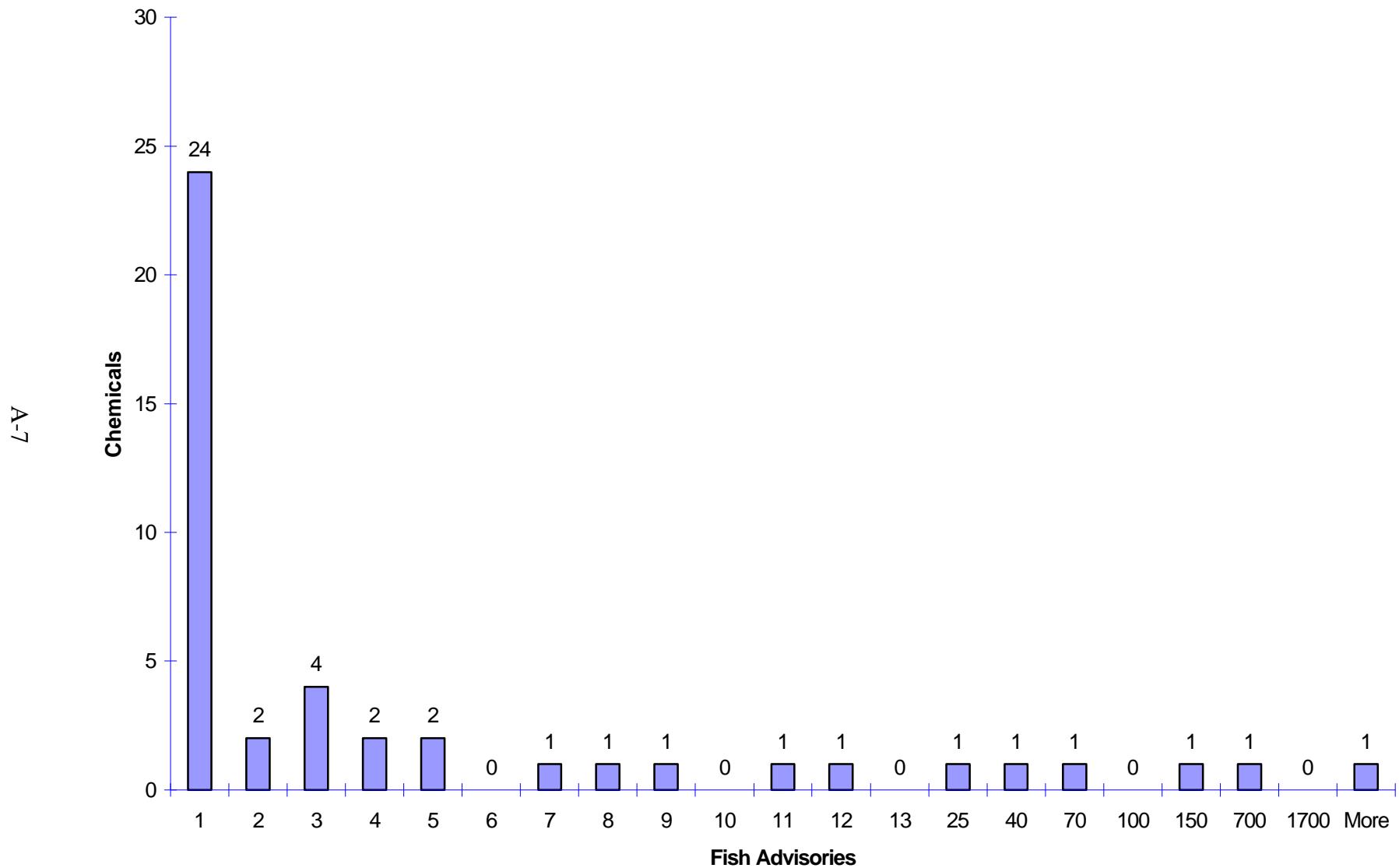


Figure A-2

## ATSDR Data Histogram

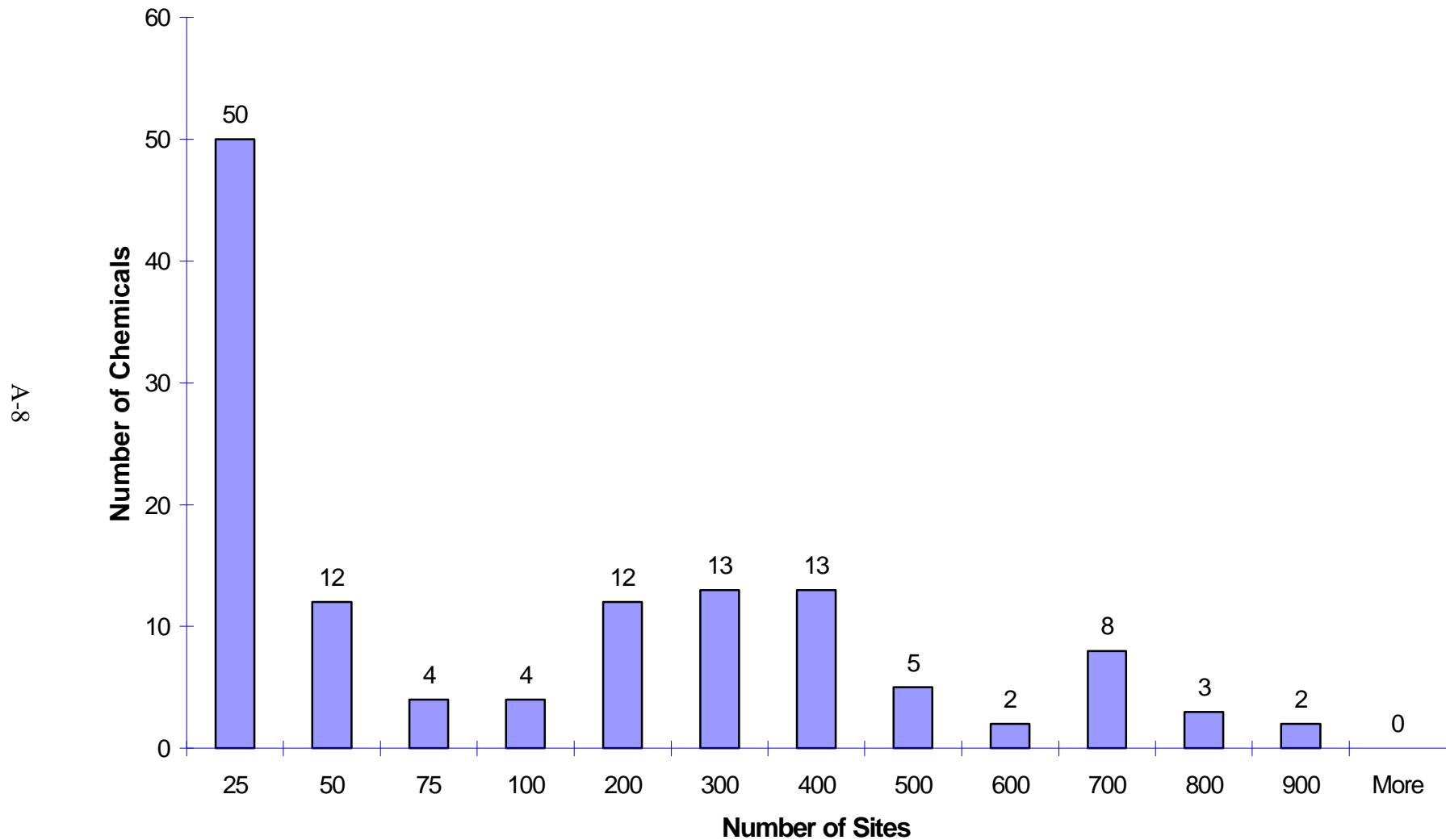


Figure A-3

### TRI Waste Quantity Histogram

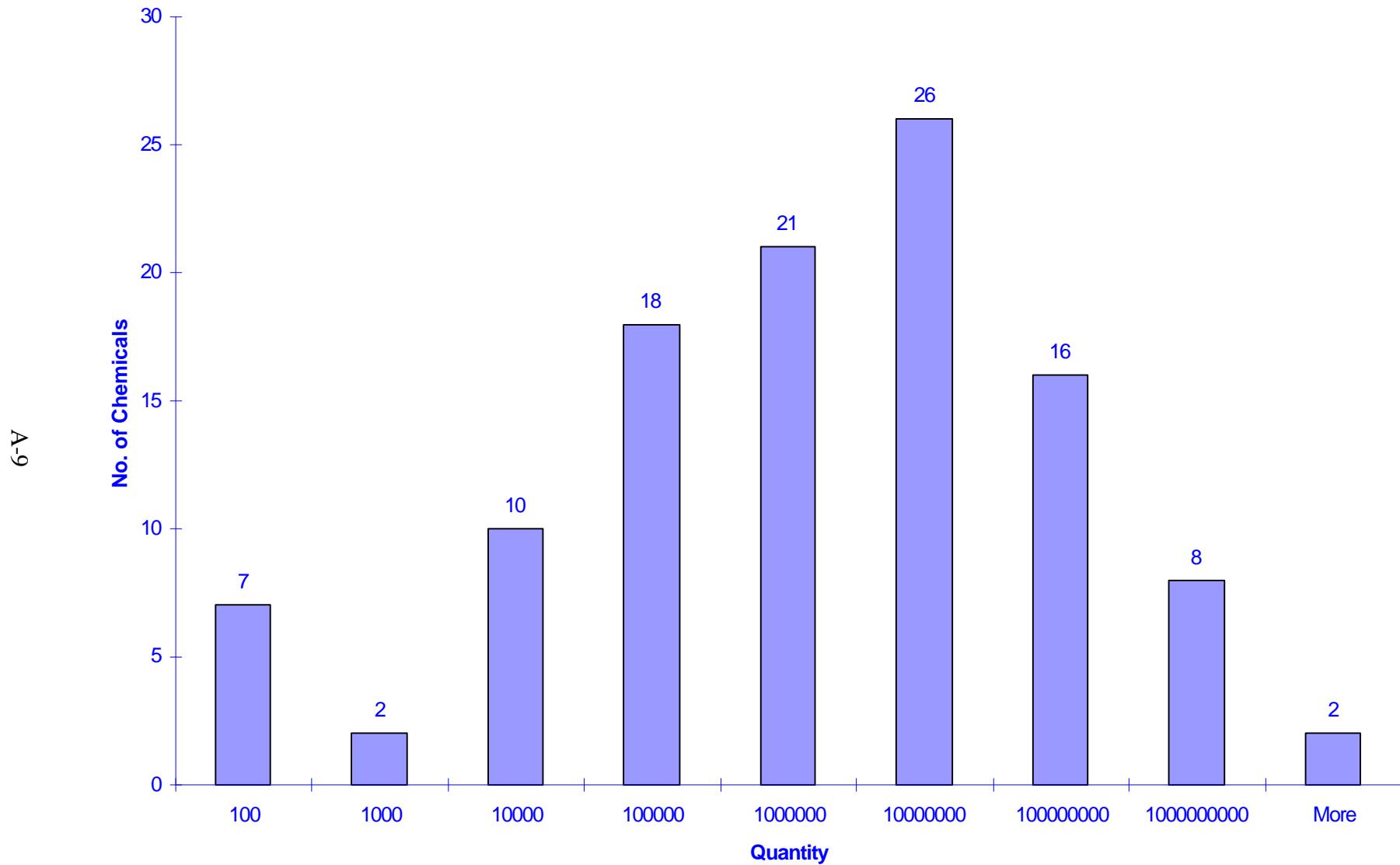
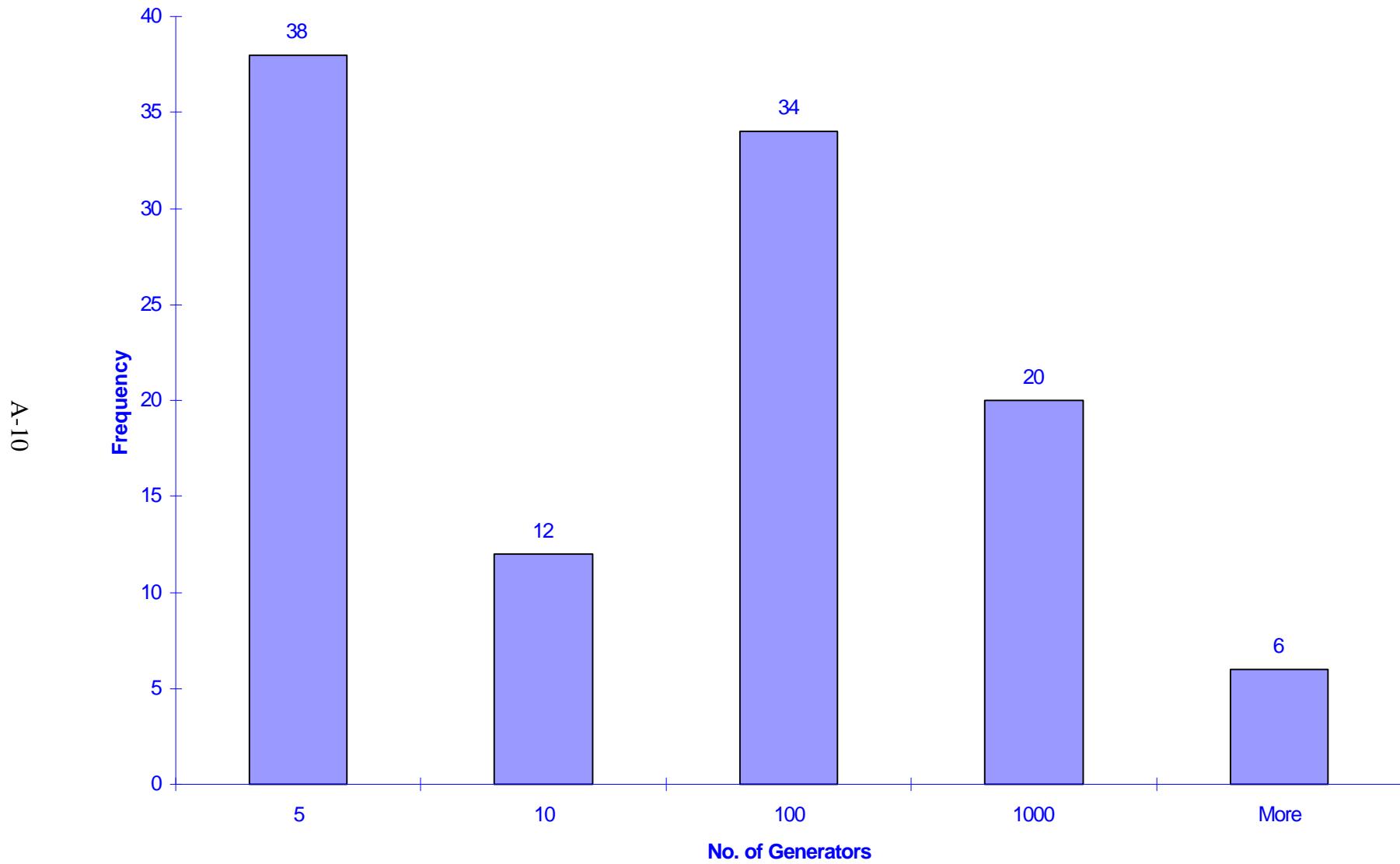
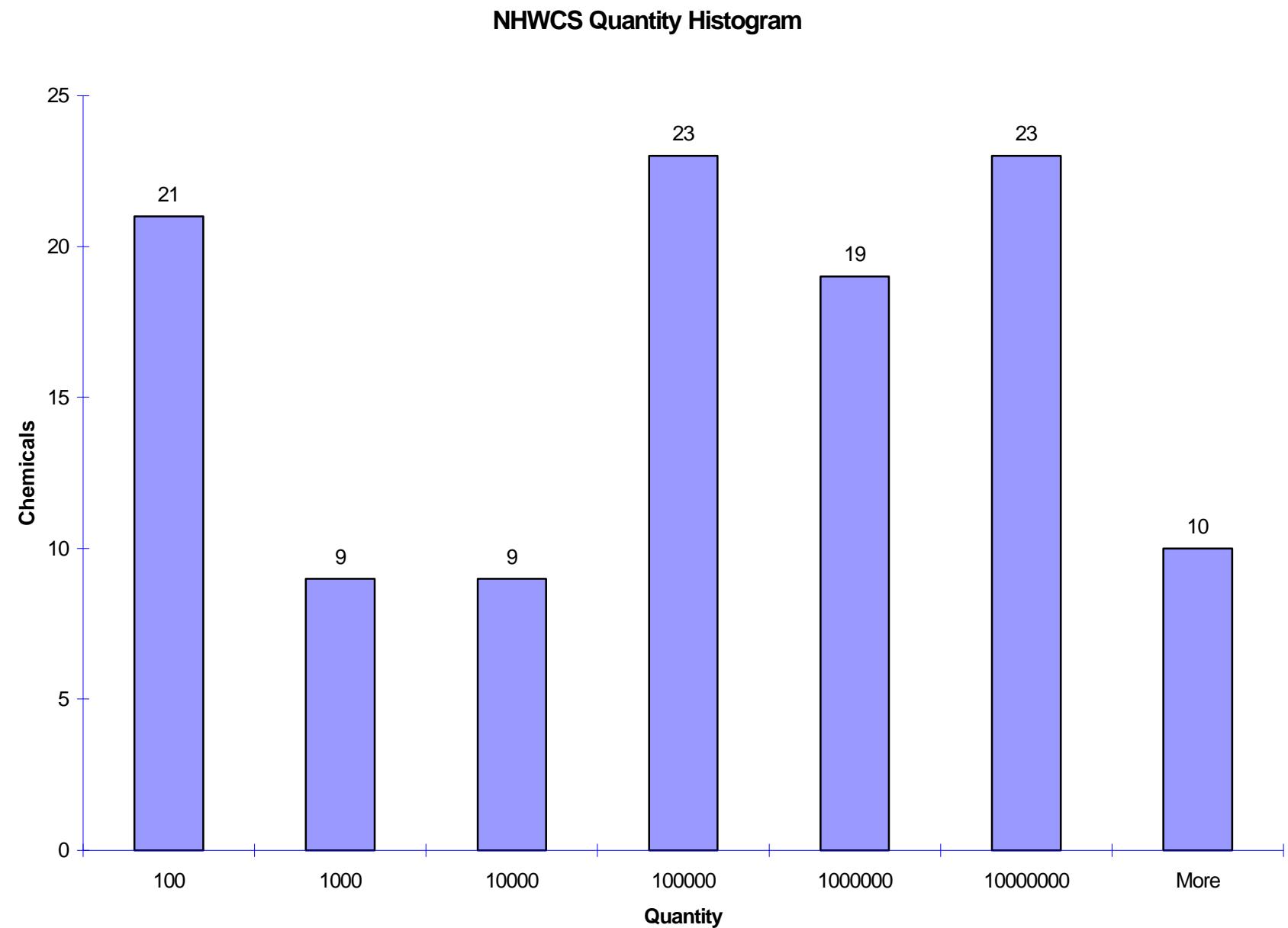


Figure A-4

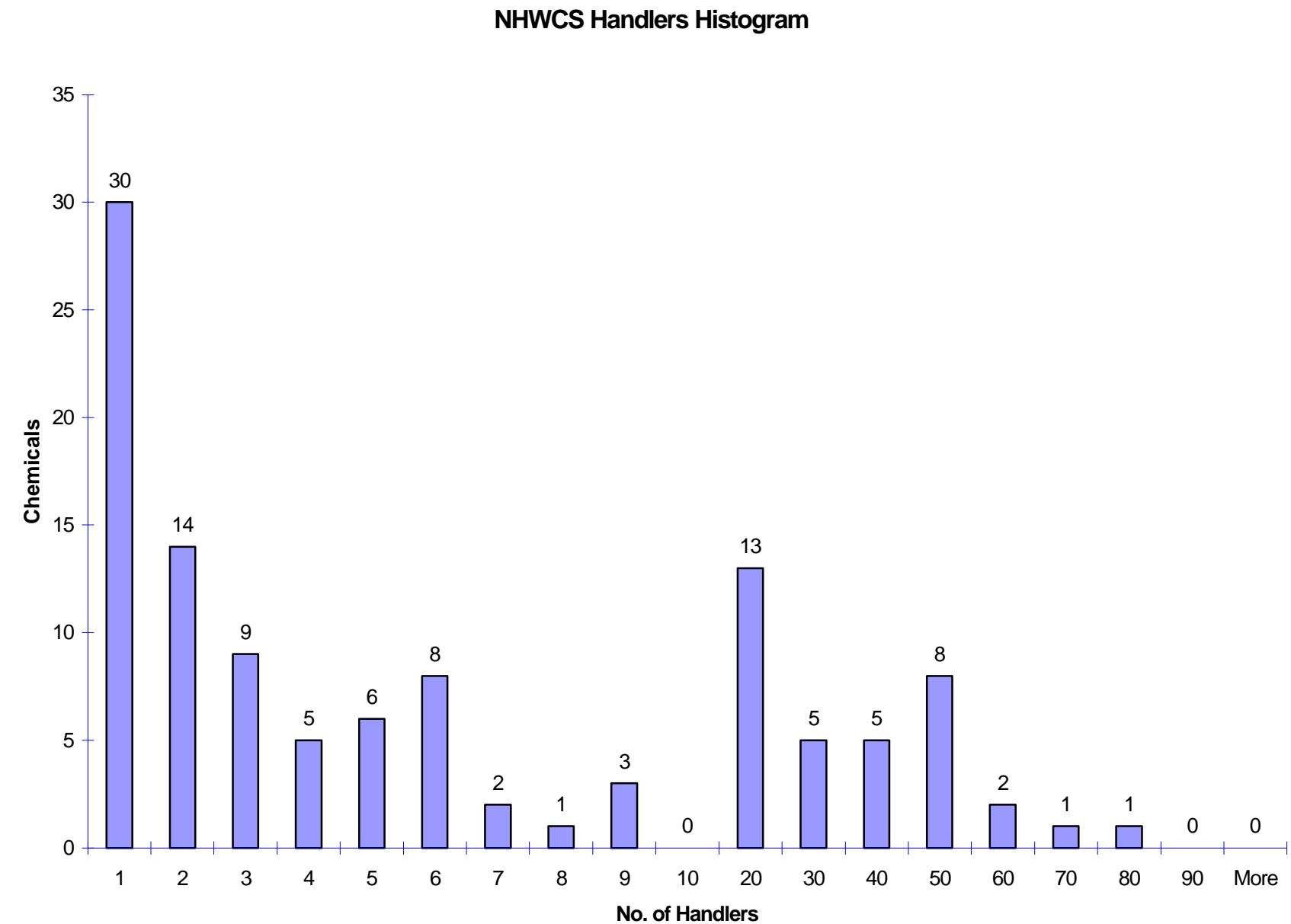
**TRI Generators Histogram**



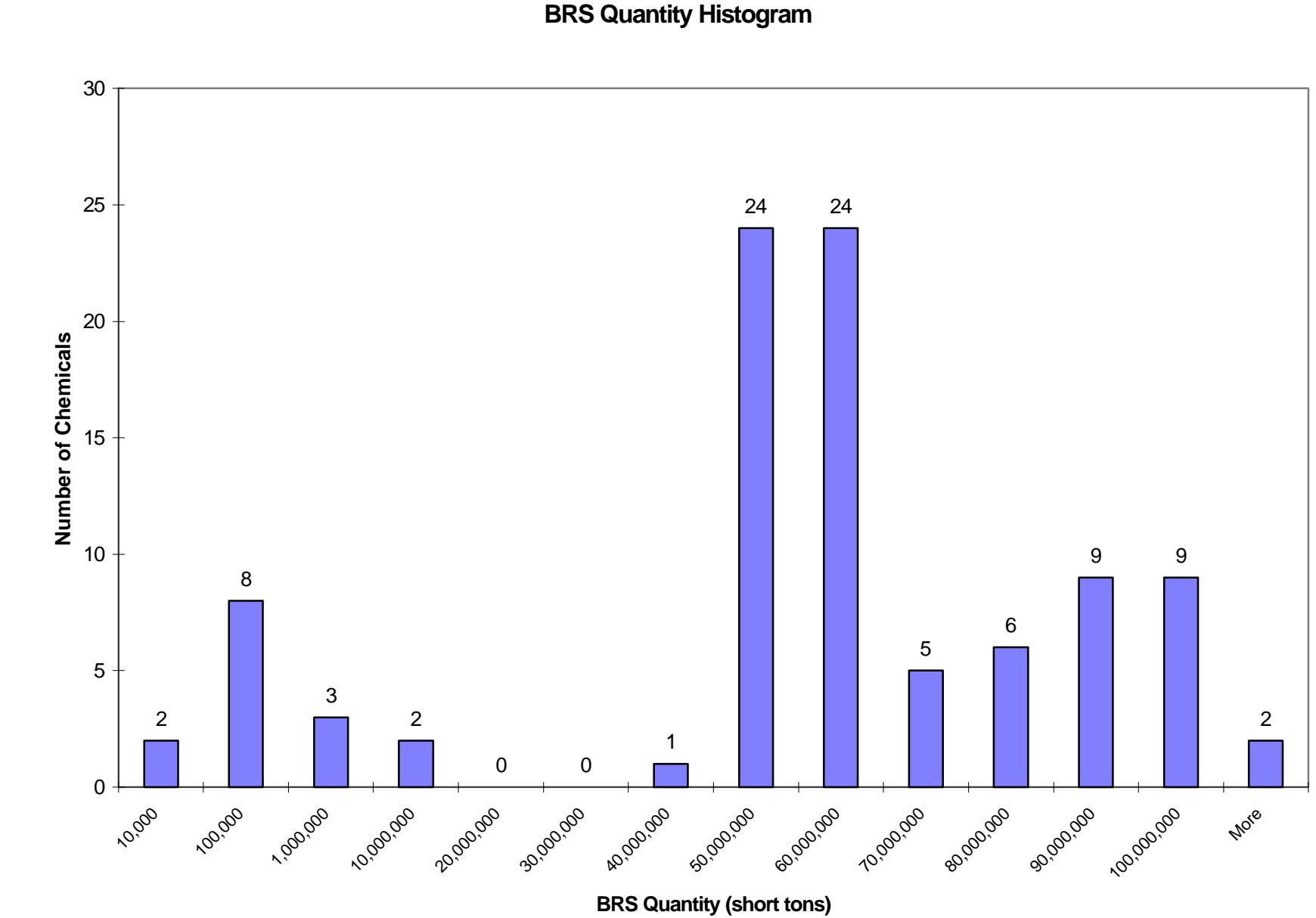
**Figure A-5**



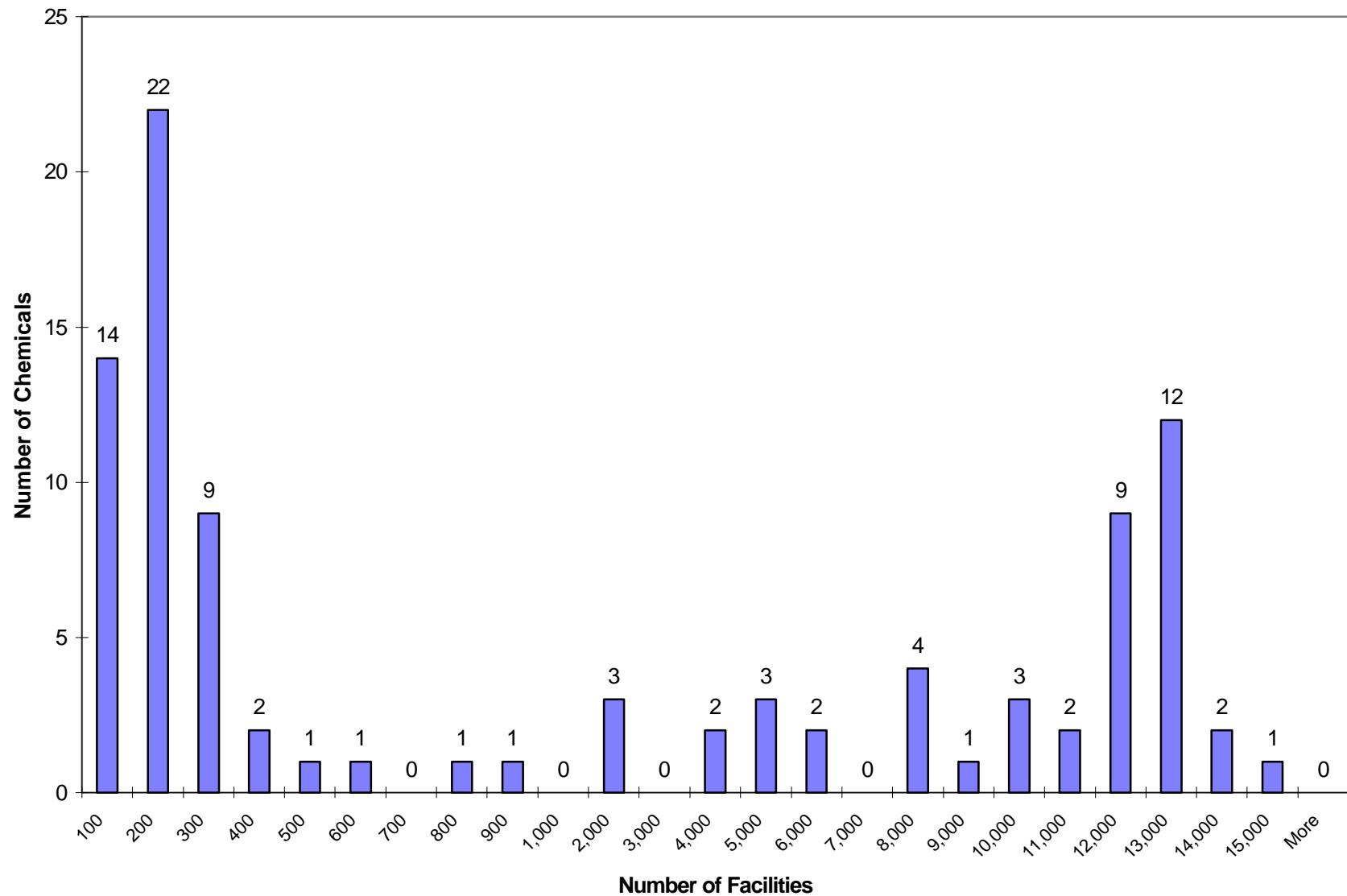
**Figure A-6**



**Figure A-7**



**Figure A-8**

**BRS Generator Data****Figure A-9**

## **Appendix B**

### **Sample Scoring Calculation**

## Appendix B

### Sample Scoring Calculation

As noted earlier, subcriteria score were combined to generate criteria scores, and criteria scores were combined to generate the total chemical score. The general approach for combining scores involved normalizing each score so that all scores were on a common scale, multiplying each score by a weighting factor to reflect the relative importance of each factor or subfactor, and then summing the products to generate the total score. The relationships can be expressed as follows:

$$\text{Total Criterion Score} = \sum_{\text{All subcriteria}} \frac{\text{subcriteria } i \text{ score}}{\text{maximum subcriteria } i \text{ score}} \times \text{weight factor } i$$

Note that we can use this relationship because we have chosen the minimum score for each factor to be 0. If the minimum score were 1, we would need to subtract the minimum score from the numerator and denominator in the fraction to get the proper normalization.

To obtain the total chemical score we use a similar relationship applied to the criteria scores:

$$\text{Total Chemical Score} = \sum_{\text{All criteria}} \frac{\text{criteria } j \text{ score}}{\text{maximum criteria } j \text{ score}} \times \text{weight factor } j$$

To put all chemicals on a scale of 0 - 100, the criteria weighting factors are set to sum to 100. The method can be illustrated as follows. Suppose the we have two chemicals with individual subcriteria scores as shown in Table B-1. The PBT and RCRA criteria are each based on a single subcriterion, whereas environmental presence is based on 3 subcriteria (Fish Advisory Database, National Sediment Inventory, and the ATSDR HazDat database) and quantity/prevalence is based on a quantity subcriterion and a prevalence subcriterion. Each subcriteria is on a 0-3 scoring scale, except for RCRA programmatic concerns which are scored on a 0-4 scale.

If all subcriteria have an equal weight of 1 and all criteria have an equal weight of 25, using the equations shown above the scoring would be as follows:

#### Maximum Scores:

$$\text{PBT Score} = (3/3) * 1 = 1$$

$$\text{Environmental Presence Score} = (3/3) * 1 + (3/3) * 1 + (3/3) * 1 = 3$$

$$\text{Quantity / Prevalence Score} = (3/3) * 1 + (3/3) * 1 = 2$$

$$\text{RCRA Factors Score} = (4/4) * 1 = 1.0$$

$$\text{Total Chemical Score} = (1/1) * 25 + (3/3) * 25 + (2/2) * 25 + (1/1) * 25 = 100$$

**Table B-1. Example of Subcriteria Scores**

Example Compounds	PBT	Environmental Presence			Quantity / Prevalence		RCRA Prog. Concerns
		FA	NSI	HAZ	Q	P	
Lead	Higher WMPT subscore of 9	9 advisories	8883 Tier 1 & 2's	883 Current NPLs	TRI- 1.1e9 lbs BRS- 1.2e8 tons	TRI- 1499 BRS- 14,622	Presence on DNAPL / Hard to Treat / or Mact
	Score of 3	Score of 1	Score of 3	Score of 3	Score of 3	Score of 3	Score of 4
Pyrene	Higher WMPT subscore of 8	No advisories	2378 Tier 1 & 2's	397 Current NPLs	TRI-NA NHWCS- 3.0e4 lbs BRS- 5.7e7 tons Score of 1.5	TRI- NA NHWCS- 17 BRS- 376	Presence on DNAPL / Hard to Treat / or Mact
	Score of 2	Score of 0	Score of 3	Score of 2		Score of 2	Score of 4

Lead Score:

$$\text{PBT Score} = (3/3) * 1 = 1.0$$

$$\text{Environmental Presence Score} = (1/3) * 1 + (3/3) * 1 + (3/3) * 1 = 2.33$$

$$\text{Quantity / Prevalence Score} = (3/3) * 1 + (3/3) * 1 = 2.0$$

$$\text{RCRA Factors Score} = (4/4) * 1 = 1.0$$

$$\text{Total Chemical Score} = (1/1) * 25 + (2.33/3) * 25 + (2/2) * 25 + (1/1) * 25 = 94.4$$

Pyrene Score:

$$\text{PBT Score} = (2/3) * 1 = 0.67$$

$$\text{Environmental Presence Score} = (0/3) * 1 + (3/3) * 1 + (2/3) * 1 = 1.67$$

$$\text{Quantity / Prevalence Score} = (1.5/3) * 1 + (2.0/3) * 1 = 1.16$$

$$\text{RCRA Factors Score} = (4/4) * 1 = 1.0$$

$$\text{Total Chemical Score} = (0.67/1) * 25 + (1.67/3) * 25 + (1.16/2) * 25 + (1/1) * 25 = 70.1$$

Suppose that PBT and Quantity/Prevalence are given weighting factors of 35 while Environmental Presence and RCRA Factors are given weighting factors of 15. The scoring would be:

Maximum Scores:

$$\text{PBT Score} = (3/3) * 1 = 1$$

$$\text{Environmental Presence Score} = (3/3) * 1 + (3/3) * 1 + (3/3) * 1 = 3$$

$$\text{Quantity / Prevalence Score} = (3/3) * 1 + (3/3) * 1 = 2.0$$

$$\text{RCRA Factors Score} = (4/4) * 1 = 1.0$$

$$\text{Total Chemical Score} = (1/1) * 35 + (3/3) * 15 + (3/3) * 35 + (1/1) * 15 = 100$$

Lead Score:

$$\text{PBT Score} = (3/3) * 1 = 1.0$$

Environmental Presence Score =  $(1/3) * 1 + (3/3) * 1 + (3/3) * 1 = 2.33$

Quantity / Prevalence Score =  $(3/3) * 1 + (3/3) * 1 = 2.0$

RCRA Factors Score =  $(4/4) * 1 = 1.0$

Total Chemical Score =  $(1.0/1) * 35 + (2.33/3) * 15 + (2/2) * 35 + (1/1) * 15 = 96.6$

Pyrene Score:

PBT Score =  $(2/3) * 1 = 0.67$

Environmental Presence Score =  $(0/3) * 1 + (3/3) * 1 + (2/3) * 1 = 1.67$

Quantity / Prevalence Score =  $(1.5/3) * 1 + (2.0/3) * 1 = 1.16$

RCRA Factors Score =  $(4/4) * 1 = 1.0$

Total Chemical Score =  $(0.67/1) * 35 + (1.67/3) * 15 + (1.16/2) * 35 + (1/1) * 15 = 67.1$

## **Appendix C**

## **Chemical Ranking Scores**

**Table C-1. Primary Criterion and Total Scores**

CAS No.	Chemical Name	RCRA Programmatic Concerns		Environmental Presence				Quantity / Prevalence		PBT Characteristics		Total Score	
		Sub-Criterion Score	Primary Criterion Score	Fish Advisory	National Sediment Inventory	ATSDR HazDat	Primary Criterion Score	Quantity	Prevalence	Primary Criterion Score	Sub-criterion Score	Primary Criterion Score	
630206	1,1,1,2-Tetrachloroethane	4.0	25.0	0.0	0.0	1.0	2.8	2.0	1.5	14.6	0.0	0.0	42.4
71556	1,1,1-Trichloroethane	4.0	25.0	0.0	1.0	3.0	11.1	2.5	3.0	22.9	1.0	8.3	67.4
79345	1,1,2,2-Tetrachloroethane	4.0	25.0	0.0	1.0	2.0	8.3	2.5	2.0	18.8	0.0	0.0	52.1
75343	1,1-Dichloroethane	4.0	25.0	0.0	0.0	3.0	8.3	2.0	1.5	14.6	1.0	8.3	56.3
95943	1,2,4,5-Tetrachlorobenzene	3.0	18.8	0.0	0.0	1.0	2.8	2.0	1.5	14.6	3.0	25.0	61.1
120821	1,2,4-Trichlorobenzene	4.0	25.0	0.0	1.0	2.0	8.3	2.0	2.0	16.7	2.0	16.7	66.7
95501	1,2-Dichlorobenzene	4.0	25.0	0.0	1.0	2.0	8.3	2.5	2.5	20.8	1.0	8.3	62.5
107062	1,2-Dichloroethane	4.0	25.0	1.0	0.0	2.0	8.3	2.5	2.5	20.8	0.0	0.0	54.2
528290	1,2-Dinitrobenzene	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
541731	1,3-Dichlorobenzene	4.0	25.0	0.0	1.0	2.0	8.3	1.5	1.5	12.5	1.0	8.3	54.2
99650	1,3-Dinitrobenzene	3.0	18.8	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	38.2
106467	1,4-Dichlorobenzene	4.0	25.0	0.0	1.0	2.0	8.3	2.0	1.5	14.6	1.0	8.3	56.3
100254	1,4-Dinitrobenzene	2.0	12.5	0.0	0.0	0.0	0.0	1.5	1.0	10.4	1.0	8.3	31.3
25973551	2-(2'-Hydroxy-3',5'-(di-t-amyl)phenyl)benzotriazole	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	3.0	25.0	33.3
119471	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	3.0	18.8	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	35.4
95954	2,4,5-Trichlorophenol	3.0	18.8	0.0	0.0	1.0	2.8	1.5	1.5	12.5	2.0	16.7	50.7
94757	2,4-D	3.0	18.8	0.0	0.0	1.0	2.8	1.5	2.0	14.6	1.0	8.3	44.4
51285	2,4-Dinitrophenol	4.0	25.0	0.0	0.0	1.0	2.8	2.0	1.0	12.5	1.0	8.3	48.6
79743	2,5-Di-(1,1-dimethylpropyl)hydroquinone	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	3.0	25.0	33.3
99309	2,6-Dichloro-4-nitroaniline	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
128370	2,6-Di-tert-butyl-p-cresol	0.0	0.0	0.0	0.0	1.0	2.8	3.0	1.0	16.7	1.0	8.3	27.8
99592	2-Methoxy-5-nitrobenzenamine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.3	8.3
97563	2-Methyl-4-((2-methylphenyl)azo)benzenamine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.2	1.0	8.3	12.5
91576	2-Methylnaphthalene	4.0	25.0	0.0	2.0	2.0	11.1	1.0	1.0	8.3	1.0	8.3	52.8
91941	3,3'-Dichlorobenzidine	1.0	6.3	0.0	0.0	1.0	2.8	1.0	1.0	8.3	0.0	0.0	17.4
119904	3,3'-Dimethoxybenzidine	1.0	6.3	0.0	0.0	1.0	2.8	0.5	1.0	6.3	1.0	8.3	23.6

**Table C-1. (continued)**

CAS No.	Chemical Name	RCRA Programmatic Concerns		Environmental Presence			Quantity / Prevalence			PBT Characteristics		Total Score	
		Sub-Criterion Score	Primary Criterion Score	Fish Advisory	National Sediment Inventory	ATSDR HazDat	Primary Criterion Score	Quantity	Prevalence	Primary Criterion Score	Sub-criterion Score	Primary Criterion Score	
20325400	3,3'-Dimethoxybenzidine dihydrochloride	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
60093	4-(Phenylazo)benzenamine	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
101144	4,4'-Methylenebis(2-chloroaniline)	2.0	12.5	0.0	0.0	1.0	2.8	1.5	2.0	14.6	1.0	8.3	38.2
101779	4,4'-Methylenebisbenzenamine	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	12.5	1.0	8.3	20.8
101688	4,4'-Methylenediphenyl isocyanate	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
101804	4,4'-Oxybisbenzenamine	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
96695	4,4'-Thiobis(6-tert-butyl-m-cresol)	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
101553	4-Bromophenyl phenyl ether	2.0	12.5	0.0	1.0	1.0	5.6	1.5	1.0	10.4	3.0	25.0	53.5
106489	4-Chlorophenol	3.0	18.8	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	38.2
7005723	4-Chlorophenyl phenyl ether	4.0	25.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	0.0	0.0	36.1
83329	Acenaphthene	4.0	25.0	0.0	2.0	2.0	11.1	1.5	2.0	14.6	1.0	8.3	59.0
208968	Acenaphthylene	3.0	18.8	0.0	3.0	2.0	13.9	1.5	1.0	10.4	1.0	8.3	51.4
75070	Acetaldehyde	1.0	6.3	0.0	0.0	1.0	2.8	2.0	2.0	16.7	0.0	0.0	25.7
107028	Acrolein	2.0	12.5	0.0	0.0	1.0	2.8	2.0	1.5	14.6	0.0	0.0	29.9
79061	Acrylamide	3.0	18.8	0.0	0.0	1.0	2.8	1.5	1.5	12.5	0.0	0.0	34.0
116063	Aldicarb	1.0	6.3	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	25.7
107186	Allyl alcohol	1.0	6.3	0.0	0.0	1.0	2.8	2.0	2.0	16.7	1.0	8.3	34.0
7429905	Aluminum	0.0	0.0	0.0	0.0	2.0	5.6	3.0	3.0	25.0	1.0	8.3	38.9
834128	Ametryn	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	19.4
120127	Anthracene	4.0	25.0	0.0	2.0	2.0	11.1	2.0	1.5	14.6	2.0	16.7	67.4
7440360	Antimony	4.0	25.0	0.0	1.0	2.0	8.3	2.5	3.0	22.9	1.0	8.3	64.6
7440382	Arsenic	4.0	25.0	1.0	3.0	3.0	19.4	2.0	3.0	20.8	1.0	8.3	73.6
1912249	Atrazine	0.0	0.0	0.0	0.0	1.0	2.8	2.0	2.0	16.7	1.0	8.3	27.8
569642	Basic green 4	0.0	0.0	0.0	0.0	1.0	2.8	0.0	0.0	0.0	1.0	8.3	11.1
1861401	Benefin	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	3.0	25.0	36.1
17804352	Benomyl	3.0	18.8	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	38.2
56038892	Benzenamine, N-(1-ethylpropyl)-3,4-dimethyl-	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	2.0	16.7	25.0
191242	Benzo(g,h,i)perylene	2.0	12.5	0.0	2.0	2.0	11.1	1.5	1.0	10.4	3.0	25.0	59.0
7440417	Beryllium	4.0	25.0	0.0	1.0	2.0	8.3	1.5	2.5	16.7	1.0	8.3	58.3

**Table C-1. (continued)**

CAS No.	Chemical Name	RCRA Programmatic Concerns		Environmental Presence			Quantity / Prevalence			PBT Characteristics		Total Score	
		Sub-Criterion Score	Primary Criterion Score	Fish Advisory	National Sediment Inventory	ATSDR HazDat	Primary Criterion Score	Quantity	Prevalence	Primary Criterion Score	Sub-criterion Score	Primary Criterion Score	
117817	Bis(2-ethylhexyl)phthalate	4.0	25.0	0.0	3.0	3.0	16.7	2.5	2.5	20.8	2.0	16.7	79.2
90948	Bis(4-(dimethylamino)phenyl)methanone	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
314409	Bromoacil	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	NA	NA	14.8
74839	Bromomethane	3.0	18.8	0.0	0.0	1.0	2.8	2.0	1.5	14.6	1.0	8.3	44.4
1689992	Bromoxynil octanoate	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	2.0	16.7	25.0
85687	Butyl benzyl phthalate	4.0	25.0	0.0	1.0	2.0	8.3	1.5	2.0	14.6	1.0	8.3	56.3
2832408	C.I. Disperse yellow 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
7440439	Cadmium	4.0	25.0	1.0	3.0	3.0	19.4	2.5	3.0	22.9	3.0	25.0	92.4
1563662	Carbofuran	3.0	18.8	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	38.2
79118	Chloroacetic acid	0.0	0.0	0.0	0.0	1.0	2.8	2.0	2.0	16.7	1.0	8.3	27.8
67663	Chloroform	4.0	25.0	1.0	0.0	3.0	11.1	2.5	3.0	22.9	1.0	8.3	67.4
5598130	Chlorpyrifos methyl	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	2.0	16.7	25.0
1897456	Chlorthalonil	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	12.5	1.0	8.3	20.8
7440473	Chromium	4.0	25.0	1.0	3.0	3.0	19.4	3.0	3.0	25.0	1.0	8.3	77.8
7440484	Cobalt	1.0	6.3	0.0	0.0	2.0	5.6	3.0	3.0	25.0	NA	NA	49.1
7440508	Copper	1.0	6.3	1.0	3.0	3.0	19.4	2.5	3.0	22.9	1.0	8.3	56.9
57125	Cyanide	3.0	18.8	0.0	0.0	2.0	5.6	2.5	3.0	22.9	1.0	8.3	55.6
1861321	Dacthal	0.0	0.0	0.0	1.0	1.0	5.6	1.0	1.0	8.3	2.0	16.7	30.6
1163195	Decabromodiphenyl oxide	0.0	0.0	0.0	0.0	0.0	0.0	2.0	3.0	20.8	1.0	8.3	29.2
78488	DEF	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	2.0	16.7	27.8
333415	Diazinon	0.0	0.0	0.0	2.0	1.0	8.3	1.0	2.0	12.5	1.0	8.3	29.2
132649	Dibenzofuran	1.0	6.3	0.0	1.0	2.0	8.3	1.0	2.0	12.5	2.0	16.7	43.8
84742	Dibutyl phthalate	4.0	25.0	0.0	2.0	2.0	11.1	2.0	2.0	16.7	2.0	16.7	69.4
115322	Dicofol	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	3.0	25.0	36.1
1675543	Diglycidal ether of Bisphenol A	3.0	18.8	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	35.4
60515	Dimethoate	1.0	6.3	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	25.7
117840	Di-n-octyl phthalate	4.0	25.0	0.0	1.0	2.0	8.3	1.5	2.0	14.6	3.0	25.0	72.9
122394	Diphenylamine	3.0	18.8	0.0	0.0	1.0	2.8	2.0	1.5	14.6	1.0	8.3	44.4
298044	Disulfoton	2.0	12.5	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	31.9
115297	Endosulfan	1.0	6.3	0.0	1.0	1.0	5.6	1.0	1.0	8.3	1.0	8.3	28.5

**Table C-1. (continued)**

CAS No.	Chemical Name	RCRA Programmatic Concerns		Environmental Presence			Quantity / Prevalence			PBT Characteristics		Total Score	
		Sub-Criterion Score	Primary Criterion Score	Fish Advisory	National Sediment Inventory	ATSDR HazDat	Primary Criterion Score	Quantity	Prevalence	Primary Criterion Score	Sub-criterion Score	Primary Criterion Score	
1031078	Endosulfan sulfate	2.0	12.5	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	31.9
959988	Endosulfan, alpha-	2.0	12.5	0.0	1.0	1.0	5.6	1.0	1.0	8.3	3.0	25.0	51.4
33213659	Endosulfan, beta-	2.0	12.5	0.0	1.0	1.0	5.6	1.0	1.0	8.3	3.0	25.0	51.4
106934	Ethylene dibromide (EDB)	4.0	25.0	0.0	0.0	1.0	2.8	1.5	1.5	12.5	0.0	0.0	40.3
75218	Ethylene oxide	2.0	12.5	0.0	0.0	1.0	2.8	2.0	2.5	18.8	0.0	0.0	34.0
2164172	Fluometuron	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
206440	Fluoranthene	4.0	25.0	0.0	3.0	2.0	13.9	1.5	1.5	12.5	3.0	25.0	76.4
86737	Fluorene	4.0	25.0	0.0	3.0	2.0	13.9	1.5	2.0	14.6	3.0	25.0	78.5
58899	gamma-hexachlorocyclohexane	3.0	18.8	0.0	2.0	2.0	11.1	1.5	1.5	12.5	3.0	25.0	67.4
76448	Heptachlor	3.0	18.8	0.0	2.0	2.0	11.1	1.5	1.5	12.5	1.0	8.3	50.7
1024573	Heptachlor epoxide	2.0	12.5	1.0	3.0	2.0	16.7	1.5	1.0	10.4	3.0	25.0	64.6
118741	Hexachlorobenzene	3.0	18.8	1.0	2.0	1.0	11.1	2.0	1.0	12.5	3.0	25.0	67.4
87683	Hexachlorobutadiene	4.0	25.0	1.0	1.0	1.0	8.3	2.0	1.0	12.5	3.0	25.0	70.8
319846	Hexachlorocyclohexane, alpha-	3.0	18.8	0.0	2.0	2.0	11.1	1.5	1.0	10.4	2.0	16.7	56.9
319857	Hexachlorocyclohexane, beta-	3.0	18.8	0.0	2.0	2.0	11.1	1.5	1.0	10.4	2.0	16.7	56.9
319868	Hexachlorocyclohexane, delta-	3.0	18.8	0.0	1.0	1.0	5.6	1.5	1.0	10.4	2.0	16.7	51.4
77474	Hexachlorocyclopentadiene	4.0	25.0	0.0	0.0	1.0	2.8	1.5	1.0	10.4	1.0	8.3	46.5
67721	Hexachloroethane	3.0	18.8	0.0	1.0	1.0	5.6	2.0	2.0	16.7	1.0	8.3	49.3
74908	Hydrocyanic acid	3.0	18.8	0.0	0.0	1.0	2.8	2.0	1.5	14.6	1.0	8.3	44.4
74884	Iodomethane	4.0	25.0	0.0	0.0	0.0	0.0	1.5	1.0	10.4	1.0	8.3	43.8
7439921	Lead	4.0	25.0	1.0	3.0	3.0	19.4	3.0	3.0	25.0	3.0	25.0	94.4
330552	Linuron	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
7439965	Manganese	0.0	0.0	0.0	1.0	3.0	11.1	3.0	3.0	25.0	NA	NA	48.1
7439976	Mercury	4.0	25.0	3.0	3.0	2.0	22.2	2.0	2.5	18.8	3.0	25.0	91.0
72435	Methoxychlor	3.0	18.8	0.0	1.0	1.0	5.6	1.0	2.0	12.5	3.0	25.0	61.8
298000	Methyl parathion	2.0	12.5	0.0	0.0	1.0	2.8	1.5	1.0	10.4	1.0	8.3	34.0
75092	Methylene chloride	4.0	25.0	0.0	1.0	3.0	11.1	2.5	3.0	22.9	0.0	0.0	59.0
91203	Naphthalene	4.0	25.0	0.0	3.0	2.0	13.9	2.5	3.0	22.9	1.0	8.3	70.1
7440020	Nickel	3.0	18.8	0.0	3.0	3.0	16.7	2.5	3.0	22.9	1.0	8.3	66.7
54115	Nicotinea	1.0	6.3	0.0	0.0	0.0	0.0	1.5	1.5	12.5	1.0	8.3	27.1
98953	Nitrobenzene	4.0	25.0	0.0	0.0	1.0	2.8	2.0	2.5	18.8	1.0	8.3	54.9

**Table C-1. (continued)**

CAS No.	Chemical Name	RCRA Programmatic Concerns		Environmental Presence			Quantity / Prevalence			PBT Characteristics		Total Score	
		Sub-Criterion Score	Primary Criterion Score	Fish Advisory	National Sediment Inventory	ATSDR HazDat	Primary Criterion Score	Quantity	Prevalence	Primary Criterion Score	Sub-criterion Score	Primary Criterion Score	
111659	Octane	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	19.4
42874033	Oxyfluorfen	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	NA	NA	11.1
56382	Parathion	4.0	25.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	44.4
40487421	Pendimethalin	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	3.0	25.0	36.1
608935	Pentachlorobenzene	3.0	18.8	0.0	1.0	1.0	5.6	2.0	1.0	12.5	3.0	25.0	61.8
82688	Pentachloronitrobenzene	2.0	12.5	0.0	0.0	1.0	2.8	1.5	1.5	12.5	3.0	25.0	52.8
87865	Pentachlorophenol	4.0	25.0	1.0	1.0	2.0	11.1	1.5	1.5	12.5	2.0	16.7	65.3
85018	Phenanthrene	2.0	12.5	0.0	3.0	2.0	13.9	2.0	2.0	16.7	3.0	25.0	68.1
108952	Phenol	4.0	25.0	0.0	2.0	2.0	11.1	2.5	3.0	22.9	1.0	8.3	67.4
96764	Phenol, 2,2-bis(1,1-dimethylethyl)-	3.0	18.8	0.0	0.0	0.0	0.0	2.0	1.0	12.5	1.0	8.3	39.6
732263	Phenol, 2,4,6-tris(1,1-dimethylethyl)-	3.0	18.8	0.0	0.0	0.0	0.0	1.0	1.0	8.3	3.0	25.0	52.1
599644	Phenol, 4-(1-methyl-1-phenylethyl)-	3.0	18.8	0.0	0.0	0.0	0.0	3.0	1.0	16.7	1.0	8.3	43.8
25154523	Phenol, nonyl-	3.0	18.8	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	35.4
92842	Phenothiazine	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	19.4
90437	Phenylphenol, o-	3.0	18.8	0.0	0.0	0.0	0.0	2.0	2.0	16.7	1.0	8.3	43.8
298022	Phorate	3.0	18.8	0.0	0.0	1.0	2.8	2.0	1.0	12.5	1.0	8.3	42.4
75445	Phosgene	3.0	18.8	0.0	0.0	1.0	2.8	2.0	1.5	14.6	1.0	8.3	44.4
88891	Picric acid	0.0	0.0	0.0	0.0	1.0	2.8	2.0	1.0	12.5	1.0	8.3	23.6
5468757	Pigment yellow 14	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
1336363	Polychlorinated biphenyls	4.0	25.0	3.0	3.0	2.0	22.2	1.5	2.0	14.6	3.0	25.0	86.8
N590	Polycyclic aromatic compounds	4.0	25.0	1.0	3.0	2.0	16.7	3.0	3.0	25.0	3.0	25.0	91.7
9003536	Polystyrene	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	2.0	16.7	27.8
129000	Pyrene	4.0	25.0	0.0	3.0	2.0	13.9	1.5	2.0	14.6	2.0	16.7	70.1
1929824	Pyridine, 2-chloro-6-(trichloromethyl)-	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
7782492	Selenium	3.0	18.8	2.0	1.0	2.0	13.9	1.5	2.5	16.7	1.0	8.3	57.6
7440224	Silver	4.0	25.0	0.0	3.0	2.0	13.9	2.0	3.0	20.8	NA	NA	79.6
122349	Simazine	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	19.4
13071799	Terbufos	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.0	12.5	1.0	8.3	20.8
127184	Tetrachloroethylene	4.0	25.0	1.0	1.0	3.0	13.9	2.5	3.0	22.9	0.0	0.0	61.8
961115	Tetrachlorvinphos	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7

**Table C-1. (continued)**

CAS No.	Chemical Name	RCRA Programmatic Concerns		Environmental Presence			Quantity / Prevalence			PBT Characteristics		Total Score	
		Sub-Criterion Score	Primary Criterion Score	Fish Advisory	National Sediment Inventory	ATSDR HazDat	Primary Criterion Score	Quantity	Prevalence	Primary Criterion Score	Sub-criterion Score	Primary Criterion Score	
59669260	Thiodicarb	2.0	12.5	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	29.2
137268	Thiram	1.0	6.3	0.0	0.0	1.0	2.8	1.0	1.5	10.4	1.0	8.3	27.8
2303175	Triallate	2.0	12.5	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	29.2
56359	Tributyltin oxide	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	NA	NA	11.1
79016	Trichloroethylene	4.0	25.0	1.0	1.0	3.0	13.9	2.5	3.0	22.9	0.0	0.0	61.8
1582098	Trifluralin	0.0	0.0	0.0	0.0	1.0	2.8	1.0	2.0	12.5	3.0	25.0	40.3
639587	Triphenyltin chloride	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.3	1.0	8.3	16.7
1120214	Undecane	0.0	0.0	0.0	0.0	1.0	2.8	1.0	1.0	8.3	1.0	8.3	19.4
7440622	Vanadium	1.0	6.3	0.0	0.0	2.0	5.6	1.5	2.5	16.7	NA	NA	38.0
7440666	Zinc	2.0	12.5	1.0	3.0	3.0	19.4	2.5	3.0	22.9	1.0	8.3	63.2

**Table C-2. PBT Characteristics Subcriterion and Primary Criterion Scores**

CAS No.	Chemical Name	PBT Characteristics						
		Persistence Score	Bioaccumulation Score	Human Toxicity Score	Eco Toxicity Score	Highest Subscore	Sub-criterion Score	Primary Criterion Score
630206	1,1,1,2-Tetrachloroethane	2	1	2	2	5	0	0.0
71556	1,1,1-Trichloroethane	3	1	1	3	7	1	8.3
79345	1,1,2,2-Tetrachloroethane	2	1	2	2	5	0	0.0
75343	1,1-Dichloroethane	3	1	1	3	7	1	8.3
95943	1,2,4,5-Tetrachlorobenzene	3	3	3	3	9	3	25.0
120821	1,2,4-Trichlorobenzene	3	3	2	2	8	2	16.7
95501	1,2-Dichlorobenzene	3	1	1	3	7	1	8.3
107062	1,2-Dichloroethane	3	1	2	2	6	0	0.0
528290	1,2-Dinitrobenzene	3	1	3	3	7	1	8.3
541731	1,3-Dichlorobenzene	3	1		3	7	1	8.3
99650	1,3-Dinitrobenzene	3	1	3	2	7	1	8.3
106467	1,4-Dichlorobenzene	3	1	1	3	7	1	8.3
100254	1,4-Dinitrobenzene	3	1	3	3	7	1	8.3
25973551	2-(2'-Hydroxy-3',5'-(di-t-amyl)phenyl)benzotriazole	3	3		3	9	3	25.0
119471	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	3	1		3	7	1	8.3
95954	2,4,5-Trichlorophenol	2	3	1	3	8	2	16.7
94757	2,4-D	3	1	2	3	7	1	8.3
51285	2,4-Dinitrophenol	3	1	2	3	7	1	8.3
79743	2,5-Di-(1,1-dimethylpropyl)hydroquinone	3	3		3	9	3	25.0
99309	2,6-Dichloro-4-nitroaniline	3	1		3	7	1	8.3
128370	2,6-Di-tert-butyl-p-cresol	3	2	2	2	7	1	8.3
99592	2-Methoxy-5-nitrobenzenamine	3	1	2	3	7	1	8.3
97563	2-Methyl-4-((2-methylphenyl)azo)benzenamine	3	1	2	3	7	1	8.3
91576	2-Methylnaphthalene	3	1		3	7	1	8.3
91941	3,3'-Dichlorobenzidine	1	2	2	2	5	0	0.0
119904	3,3'-Dimethoxybenzidine	3	1	1	3	7	1	8.3
20325400	3,3'-Dimethoxybenzidine dihydrochloride	3	1	2	3	7	1	8.3
60093	4-(Phenylazo)benzenamine	3	1	2	3	7	1	8.3
101144	4,4'-Methylenebis(2-chloroaniline)	3	1	2	3	7	1	8.3
101779	4,4'-Methylenebisbenzenamine	3	1	2	3	7	1	8.3
101688	4,4'-Methylenediphenyl isocyanate	1	3	3	3	7	1	8.3
101804	4,4'-Oxybisbenzenamine	3	1	3	3	7	1	8.3
96695	4,4'-Thiobis(6-tert-butyl-m-cresol)	3	1		3	7	1	8.3
101553	4-Bromophenyl phenyl ether	3	3		3	9	3	25.0
106489	4-Chlorophenol	3	1		3	7	1	8.3
7005723	4-Chlorophenyl phenyl ether	1	2		3	6	0	0.0
83329	Acenaphthene	2	2	2	3	7	1	8.3
208968	Acenaphthylene	2	2		3	7	1	8.3
75070	Acetaldehyde	1	1	2	2	4	0	0.0
107028	Acrolein	2	1	3	3	6	0	0.0

**Table C-2. (continued)**

CAS No.	Chemical Name	PBT Characteristics						
		Persistence Score	Bioaccumulation Score	Human Toxicity Score	Eco Toxicity Score	Highest Subscore	Sub-criterion Score	Primary Criterion Score
79061	Acrylamide	2	1	3	3	6	0	0.0
116063	Aldicarb	3	1	2	3	7	1	8.3
107186	Allyl alcohol	3	1	2	3	7	1	8.3
7429905	Aluminum	3	1		3	7	1	8.3
834128	Ametryn	3	1	2	3	7	1	8.3
120127	Anthracene	3	2	1	3	8	2	16.7
7440360	Antimony	3	1	3	2	7	1	8.3
7440382	Arsenic	3	1	3	3	7	1	8.3
1912249	Atrazine	3	1	2	3	7	1	8.3
569642	Basic green 4	3	1		3	7	1	8.3
1861401	Benefin	3	3	1	3	9	3	25.0
17804352	Benomyl	3	1	2	3	7	1	8.3
56038892	Benzenamine, N-(1-ethylpropyl)-3,4-dimethyl-	3	2		3	8	2	16.7
191242	Benzo(g,h,i)perylene	3	3		3	9	3	25.0
7440417	Beryllium	3	1	3	3	7	1	8.3
117817	Bis(2-ethylhexyl)phthalate	3	2	2	3	8	2	16.7
90948	Bis(4-(dimethylamino)phenyl)methanone	3	1	2	3	7	1	8.3
314409	Bromoacil	NA	NA	NA	NA	NA	NA	NA
74839	Bromomethane	3	1	2	3	7	1	8.3
1689992	Bromoxynil octanoate	2	3	2	3	8	2	16.7
85687	Butyl benzyl phthalate	2	2	2	3	7	1	8.3
2832408	C.I. Disperse yellow 3	3	1	2	3	7	1	8.3
7440439	Cadmium	3	3	3	3	9	3	25.0
1563662	Carbofuran	3	1	2	3	7	1	8.3
79118	Chloroacetic acid	3	1	2	3	7	1	8.3
67663	Chloroform	3	1	2	3	7	1	8.3
5598130	Chlorpyrifos methyl	3	2	2	3	8	2	16.7
1897456	Chlorthalonal	3	1	2	3	7	1	8.3
7440473	Chromium	3	1	3	3	7	1	8.3
7440484	Cobalt	3		3	3	NA	NA	NA
7440508	Copper	3	1	3	3	7	1	8.3
57125	Cyanide	3	1	2	3	7	1	8.3
1861321	Dacthal	3	2	2	3	8	2	16.7
1163195	Decabromodiphenyl oxide	3	1	2	3	7	1	8.3
78488	DEF	3	2	3	3	8	2	16.7
333415	Diazinon	3	1	2	3	7	1	8.3
132649	Dibenzofuran	2	3	2	3	8	2	16.7
84742	Dibutyl phthalate	2	3	1	3	8	2	16.7
115322	Dicofol	3	3	2	3	9	3	25.0
1675543	Diglycidal ether of Bisphenol A	3	1	1	3	7	1	8.3

**Table C-2. (continued)**

CAS No.	Chemical Name	PBT Characteristics						Primary Criterion Score
		Persistence Score	Bioaccumulation Score	Human Toxicity Score	Eco Toxicity Score	Highest Subscore	Sub-criterion Score	
60515	Dimethoate	3	1	3	3	7	1	8.3
117840	Di-n-octyl phthalate	3	3	2	3	9	3	25.0
122394	Diphenylamine	3	1	2	3	7	1	8.3
298044	Disulfoton	2	2	3	3	7	1	8.3
115297	Endosulfan	1	3	2	3	7	1	8.3
1031078	Endosulfan sulfate	3	1		3	7	1	8.3
959988	Endosulfan, alpha-	3	3		3	9	3	25.0
33213659	Endosulfan, beta-	3	3		3	9	3	25.0
106934	Ethylene dibromide (EDB)	2	1	3	3	6	0	0.0
75218	Ethylene oxide	3	1	2	2	6	0	0.0
2164172	Fluometuron	3	1	2	3	7	1	8.3
206440	Fluoranthene	3	3	2	3	9	3	25.0
86737	Fluorene	3	3	2	3	9	3	25.0
58899	gamma-hexachlorocyclohexane	3	3	3	3	9	3	25.0
76448	Heptachlor	1	3	3	3	7	1	8.3
1024573	Heptachlor epoxide	3	3	3	3	9	3	25.0
118741	Hexachlorobenzene	3	3	2	3	9	3	25.0
87683	Hexachlorobutadiene	3	3	3	3	9	3	25.0
319846	Hexachlorocyclohexane, alpha-	3	2	3	3	8	2	16.7
319857	Hexachlorocyclohexane, beta-	3	2	2	3	8	2	16.7
319868	Hexachlorocyclohexane, delta-	3	2	2	3	8	2	16.7
77474	Hexachlorocyclopentadiene	2	2	2	3	7	1	8.3
67721	Hexachloroethane	2	2	2	3	7	1	8.3
74908	Hydrocyanic acid	3	1	2	3	7	1	8.3
74884	Iodomethane	3	1	3	2	7	1	8.3
7439921	Lead	3	3	3	3	9	3	25.0
330552	Linuron	3	1	2	3	7	1	8.3
7439965	Manganese	3		3	3	NA	NA	NA
7439976	Mercury	3	3	3	3	9	3	25.0
72435	Methoxychlor	3	3	2	3	9	3	25.0
298000	Methyl parathion	3	1	3	3	7	1	8.3
75092	Methylene chloride	3	1	2	2	6	0	0.0
91203	Naphthalene	2	2	2	3	7	1	8.3
7440020	Nickel	3	1	3	3	7	1	8.3
54115	Nicotinea	3	1	3	2	7	1	8.3
98953	Nitrobenzene	3	1	3	3	7	1	8.3
111659	Octane	1	3		3	7	1	8.3
42874033	Oxyfluorfen	NA	NA	NA	NA	NA	NA	NA
56382	Parathion	3	1	2	3	7	1	8.3
40487421	Pendimethalin	3	3	2	3	9	3	25.0

**Table C-2. (continued)**

CAS No.	Chemical Name	PBT Characteristics						Primary Criterion Score
		Persistence Score	Bioaccumulation Score	Human Toxicity Score	Eco Toxicity Score	Highest Subscore	Sub-criterion Score	
608935	Pentachlorobenzene	3	3	2	3	9	3	25.0
82688	Pentachloronitrobenzene	3	3	2	3	9	3	25.0
87865	Pentachlorophenol	3	2	2	3	8	2	16.7
85018	Phanthrene	3	3		3	9	3	25.0
108952	Phenol	3	1	1	3	7	1	8.3
96764	Phenol, 2,2-bis(1,1-dimethylethyl)-	3	1		3	7	1	8.3
732263	Phenol, 2,4,6-tris(1,1-dimethylethyl)-	3	3		3	9	3	25.0
599644	Phenol, 4-(1-methyl-1-phenylethyl)-	2	2		3	7	1	8.3
25154523	Phenol, nonyl-	2	2		3	7	1	8.3
92842	Phenothiazine	2	2		3	7	1	8.3
90437	Phenylphenol, o-	3	1	1	3	7	1	8.3
298022	Phorate	3	1	3	3	7	1	8.3
75445	Phosgene	3	1	3	1	7	1	8.3
88891	Picric acid	3	1	3	2	7	1	8.3
5468757	Pigment yellow 14	3	1	1	3	7	1	8.3
	Polychlorinated biphenyls <sup>*</sup>	3	3	2	3	9	3	25.0
	Polycyclic aromatic compounds <sup>*</sup>	3	3	2	3	9	3	25.0
9003536	Polystyrene	2	3		3	8	2	16.7
129000	Pyrene	3	2	2	3	8	2	16.7
1929824	Pyridine, 2-chloro-6-(trichloromethyl)-	3	1		3	7	1	8.3
7782492	Selenium	3	1	2	3	7	1	8.3
7440224	Silver	3		2	3	NA	NA	NA
122349	Simazine	3	1	2	3	7	1	8.3
13071799	Terbufos	2	2	3	3	7	1	8.3
127184	Tetrachloroethylene	3	1	2	2	6	0	0.0
961115	Tetrachlorvinphos	3	1	2	3	7	1	8.3
59669260	Thiodicarb	3	1		3	7	1	8.3
137268	Thiram	3	1	2	3	7	1	8.3
2303175	Triallate	3	2	2	2	7	1	8.3
56359	Tributyltin oxide	NA	NA	NA	NA	NA	NA	NA
79016	Trichloroethylene	2	1	2	2	5	0	0.0
1582098	Trifluralin	3	3	2	3	9	3	25.0
639587	Triphenyltin chloride	2	2	2	3	7	1	8.3
1120214	Undecane	2	2		3	7	1	8.3
7440622	Vanadium	3		2	3	NA	NA	NA
7440666	Zinc	3	1	1	3	7	1	8.3

\* These chemical categories were scored based on the highest scoring chemical in the group

**Table C-3. Environmental Presence: Subcriterion (each data source represents a subcriterion) and Primary Criterion Scores**

Cas No.	Chemical Name	Environmental Presence						Primary Criterion Score	
		Fish Advisory		National Sediment Inventory					
		# of Sites	Score	# of Sites	Score	# of Sites	Score		
630206	1,1,1,2-Tetrachloroethane	Not Found	0	Not Found	0	10	1	2.8	
71556	1,1,1-Trichloroethane	Not Found	0	10	1	620	3	11.1	
79345	1,1,2,2-Tetrachloroethane	0	0	2	1	251	2	8.3	
75343	1,1-Dichloroethane	Not Found	0	0	0	520	3	8.3	
95943	1,2,4,5-Tetrachlorobenzene	Not Found	0	0	0	14	1	2.8	
120821	1,2,4-Trichlorobenzene	Not Found	0	55	1	148	2	8.3	
95501	1,2-Dichlorobenzene	Not Found	0	61	1	227	2	8.3	
107062	1,2-Dichloroethane	1	1	0	0	440	2	8.3	
528290	1,2-Dinitrobenzene	Not Found	0	Not Found	0	Not Found	0	0.0	
541731	1,3-Dichlorobenzene	Not Found	0	22	1	132	2	8.3	
99650	1,3-Dinitrobenzene	Not Found	0	Not Found	0	14	1	2.8	
106467	1,4-Dichlorobenzene	Not Found	0	94	1	247	2	8.3	
100254	1,4-Dinitrobenzene	Not Found	0	Not Found	0	Not Found	0	0.0	
25973551	2-(2'-Hydroxy-3',5'-(di-t-amyl)phenyl)benzotriazole	Not Found	0	Not Found	0	Not Found	0	0.0	
119471	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	Not Found	0	Not Found	0	Not Found	0	0.0	
95954	2,4,5-Trichlorophenol	Not Found	0	0	0	38	1	2.8	
94757	2,4-D	Not Found	0	0	0	36	1	2.8	
51285	2,4-Dinitrophenol	Not Found	0	0	0	47	1	2.8	
79743	2,5-Di-(1,1-dimethylpropyl)hydroquinone	Not Found	0	Not Found	0	Not Found	0	0.0	
99309	2,6-Dichloro-4-nitroaniline	Not Found	0	Not Found	0	Not Found	0	0.0	
128370	2,6-Di-tert-butyl-p-cresol	Not Found	0	Not Found	0	2	1	2.8	
99592	2-Methoxy-5-nitrobenzenamine	Not Found	0	Not Found	0	Not Found	0	0.0	
97563	2-Methyl-4-((2-methylphenyl)azo)benzenamine	Not Found	0	Not Found	0	Not Found	0	0.0	
91576	2-Methylnaphthalene	Not Found	0	593	2	316	2	11.1	
91941	3,3'-Dichlorobenzidine	Not Found	0	0	0	27	1	2.8	
119904	3,3'-Dimethoxybenzidine	Not Found	0	Not Found	0	1	1	2.8	
20325400	3,3'-Dimethoxybenzidine dihydrochloride	Not Found	0	Not Found	0	Not Found	0	0.0	
60093	4-(Phenylazo)benzenamine	Not Found	0	Not Found	0	Not Found	0	0.0	
101144	4,4'-Methylenebis(2-chloroaniline)	Not Found	0	Not Found	0	3	1	2.8	
101779	4,4'-Methylenebisbenzenamine	Not Found	0	Not Found	0	Not Found	0	0.0	

**Table C-3. (continued)**

Cas No.	Chemical Name	Environmental Presence				ATSDR HazDat		Primary Criterion Score	
		Fish Advisory		National Sediment Inventory					
		# of Sites	Score	# of Sites	Score	# of Sites	Score		
101688	4,4'-Methylenediphenyl isocyanate	Not Found	0	Not Found	0	Not Found	0	0.0	
101804	4,4'-Oxybisbenzenamine	Not Found	0	Not Found	0	Not Found	0	0.0	
96695	4,4'-Thiobis(6-tert-butyl-m-cresol)	Not Found	0	Not Found	0	Not Found	0	0.0	
101553	4-Bromophenyl phenyl ether	Not Found	0	7	1	13	1	5.6	
106489	4-Chlorophenol	Not Found	0	Not Found	0	7	1	2.8	
7005723	4-Chlorophenyl phenyl ether	Not Found	0	Not Found	0	13	1	2.8	
83329	Acenaphthene	Not Found	0	503	2	247	2	11.1	
208968	Acenaphthylene	Not Found	0	1032	3	189	2	13.9	
75070	Acetaldehyde	Not Found	0	Not Found	0	6	1	2.8	
107028	Acrolein	Not Found	0	0	0	21	1	2.8	
79061	Acrylamide	Not Found	0	Not Found	0	2	1	2.8	
116063	Aldicarb	Not Found	0	Not Found	0	1	1	2.8	
107186	Allyl alcohol	Not Found	0	Not Found	0	7	1	2.8	
7429905	Aluminum	Not Found	0	Not Found	0	422	2	5.6	
834128	Ametryn	Not Found	0	Not Found	0	1	1	2.8	
120127	Anthracene	Not Found	0	896	2	297	2	11.1	
7440360	Antimony	Not Found	0	56	1	378	2	8.3	
7440382	Arsenic	2	1	8802	3	758	3	19.4	
1912249	Atrazine	Not Found	0	0	0	13	1	2.8	
569642	Basic green 4	Not Found	0	Not Found	0	1	1	2.8	
1861401	Benefin	Not Found	0	Not Found	0	1	1	2.8	
17804352	Benomyl	Not Found	0	Not Found	0	1	1	2.8	
56038892	Benzenamine, N-(1-ethylpropyl)-3,4-dimethyl-	Not Found	0	Not Found	0	Not Found	0	0.0	
191242	Benzo(g,h,i)perylene	Not Found	0	259	2	262	2	11.1	
7440417	Beryllium	Not Found	0	39	1	386	2	8.3	
117817	Bis(2-ethylhexyl)phthalate	Not Found	0	1510	3	561	3	16.7	
90948	Bis(4-(dimethylamino)phenyl)methanone	Not Found	0	Not Found	0	Not Found	0	0.0	
314409	Bromoacil	Not Found	0	Not Found	0	4	1	2.8	
74839	Bromomethane	Not Found	0	0	0	65	1	2.8	
1689992	Bromoxynil octanoate	Not Found	0	Not Found	0	Not Found	0	0.0	
85687	Butyl benzyl phthalate	Not Found	0	52	1	242	2	8.3	
2832408	C.I. Disperse yellow 3	Not Found	0	Not Found	0	Not Found	0	0.0	

C-12

**Table C-3. (continued)**

Cas No.	Chemical Name	Environmental Presence				ATSDR HazDat		Primary Criterion Score	
		Fish Advisory		National Sediment Inventory					
		# of Sites	Score	# of Sites	Score	# of Sites	Score		
7440439	Cadmium	7	1	7206	3	713	3	19.4	
1563662	Carbofuran	Not Found	0	Not Found	0	2	1	2.8	
79118	Chloroacetic acid	Not Found	0	Not Found	0	3	1	2.8	
67663	Chloroform	1	1	0	0	611	3	11.1	
5598130	Chlorpyrifos methyl	Not Found	0	Not Found	0	Not Found	0	0.0	
1897456	Chlorthalonil	Not Found	0	Not Found	0	Not Found	0	0.0	
7440473	Chromium	1	1	4552	3	803	3	19.4	
7440484	Cobalt	Not Found	0	Not Found	0	315	2	5.6	
7440508	Copper	1	1	11213	3	665	3	19.4	
57125	Cyanide	Not Found	0	0	0	352	2	5.6	
1861321	Dacthal	Not Found	0	3	1	1	1	5.6	
1163195	Decabromodiphenyl oxide	Not Found	0	Not Found	0	Not Found	0	0.0	
78488	DEF	Not Found	0	Not Found	0	3	1	2.8	
333415	Diazinon	Not Found	0	188	2	15	1	8.3	
132649	Dibenzofuran	Not Found	0	76	1	215	2	8.3	
84742	Dibutyl phthalate	Not Found	0	121	2	373	2	11.1	
115322	Dicofol	Not Found	0	0	0	3	1	2.8	
1675543	Diglycidal ether of Bisphenol A	Not Found	0	Not Found	0	Not Found	0	0.0	
60515	Dimethoate	Not Found	0	Not Found	0	3	1	2.8	
117840	Di-n-octyl phthalate	Not Found	0	23	1	272	2	8.3	
122394	Diphenylamine	Not Found	0	Not Found	0	10	1	2.8	
298044	Disulfoton	Not Found	0	0	0	4	1	2.8	
115297	Endosulfan	Not Found	0	20	1	41	1	5.6	
1031078	Endosulfan sulfate	Not Found	0	Not Found	0	79	1	2.8	
959988	Endosulfan, alpha-	Not Found	0	45	1	65	1	5.6	
33213659	Endosulfan, beta-	Not Found	0	42	1	44	1	5.6	
106934	Ethylene dibromide (EDB)	Not Found	0	Not Found	0	25	1	2.8	
75218	Ethylene oxide	Not Found	0	Not Found	0	3	1	2.8	
2164172	Fluometuron	Not Found	0	Not Found	0	Not Found	0	0.0	
206440	Fluoranthene	Not Found	0	1308	3	391	2	13.9	
86737	Fluorene	Not Found	0	1372	3	275	2	13.9	
58899	gamma-hexachlorocyclohexane	Not Found	0	628	2	143	2	11.1	

C-13

**Table C-3. (continued)**

Cas No.	Chemical Name	Environmental Presence				ATSDR HazDat		Primary Criterion Score	
		Fish Advisory		National Sediment Inventory					
		# of Sites	Score	# of Sites	Score	# of Sites	Score		
76448	Heptachlor	Not Found	0	210	2	142	2	11.1	
1024573	Heptachlor epoxide	1	1	1431	3	114	2	16.7	
118741	Hexachlorobenzene	3	1	224	2	71	1	11.1	
87683	Hexachlorobutadiene	3	1	81	1	42	1	8.3	
319846	Hexachlorocyclohexane, alpha-	Not Found	0	472	2	100	2	11.1	
319857	Hexachlorocyclohexane, beta-	Not Found	0	257	2	108	2	11.1	
319868	Hexachlorocyclohexane, delta-	Not Found	0	95	1	98	1	5.6	
77474	Hexachlorocyclopentadiene	Not Found	0	Not Found	0	23	1	2.8	
67721	Hexachloroethane	Not Found	0	1	1	36	1	5.6	
74908	Hydrocyanic acid	Not Found	0	Not Found	0	5	1	2.8	
74884	Iodomethane	Not Found	0	Not Found	0	Not Found	0	0.0	
7439921	Lead	9	1	8883	3	883	3	19.4	
330552	Linuron	Not Found	0	Not Found	0	Not Found	0	0.0	
7439965	Manganese	Not Found	0	5	1	604	3	11.1	
7439976	Mercury	1782	3	7000	3	182	2	22.2	
72435	Methoxychlor	Not Found	0	33	1	42	1	5.6	
298000	Methyl parathion	Not Found	0	Not Found	0	11	1	2.8	
75092	Methylene chloride	Not Found	0	11	1	689	3	11.1	
91203	Naphthalene	Not Found	0	1538	3	485	2	13.9	
7440020	Nickel	Not Found	0	9260	3	629	3	16.7	
54115	Nicotinea	Not Found	0	Not Found	0	Not Found	0	0.0	
98953	Nitrobenzene	Not Found	0	0	0	75	1	2.8	
111659	Octane	Not Found	0	Not Found	0	17	1	2.8	
42874033	Oxyfluorfen	Not Found	0	Not Found	0	Not Found	0	0.0	
56382	Parathion	Not Found	0	0	0	13	1	2.8	
40487421	Pendimethalin	Not Found	0	Not Found	0	1	1	2.8	
608935	Pentachlorobenzene	0	0	4	1	10	1	5.6	
82688	Pentachloronitrobenzene	Not Found	0	0	0	6	1	2.8	
87865	Pentachlorophenol	2	1	26	1	241	2	11.1	
85018	Phenanthrene	Not Found	0	1029	3	429	2	13.9	
108952	Phenol	Not Found	0	155	2	467	2	11.1	
96764	Phenol, 2,2-bis(1,1-dimethylethyl)-	Not Found	0	Not Found	0	Not Found	0	0.0	

C-14

**Table C-3. (continued)**

Cas No.	Chemical Name	Environmental Presence				ATSDR HazDat		Primary Criterion Score	
		Fish Advisory		National Sediment Inventory					
		# of Sites	Score	# of Sites	Score	# of Sites	Score		
732263	Phenol, 2,4,6-tris(1,1-dimethylethyl)-	Not Found	0	Not Found	0	Not Found	0	0.0	
599644	Phenol, 4-(1-methyl-1-phenylethyl)-	Not Found	0	Not Found	0	Not Found	0	0.0	
25154523	Phenol, nonyl-	Not Found	0	Not Found	0	Not Found	0	0.0	
92842	Phenothiazine	Not Found	0	Not Found	0	1	1	2.8	
90437	Phenylphenol, o-	Not Found	0	Not Found	0	Not Found	0	0.0	
298022	Phorate	Not Found	0	Not Found	0	2	1	2.8	
75445	Phosgene	Not Found	0	Not Found	0	4	1	2.8	
88891	Picric acid	Not Found	0	Not Found	0	6	1	2.8	
5468757	Pigment yellow 14	Not Found	0	Not Found	0	Not Found	0	0.0	
1336363	Polychlorinated biphenyls	588	3	10771	3	367	2	22.2	
N590	Polycyclic aromatic compounds	5	1	2609	3	353	2	16.7	
9003536	Polystyrene	Not Found	0	Not Found	0	1	1	2.8	
129000	Pyrene	Not Found	0	2378	3	397	2	13.9	
1929824	Pyridine, 2-chloro-6-(trichloromethyl)-	Not Found	0	Not Found	0	Not Found	0	0.0	
7782492	Selenium	11	2	4	1	365	2	13.9	
7440224	Silver	Not Found	0	1433	3	378	2	13.9	
122349	Simazine	Not Found	0	0	0	2	1	2.8	
13071799	Terbufos	Not Found	0	Not Found	0	Not Found	0	0.0	
127184	Tetrachloroethylene	1	1	19	1	694	3	13.9	
961115	Tetrachlorvinphos	Not Found	0	Not Found	0	Not Found	0	0.0	
59669260	Thiodicarb	Not Found	0	Not Found	0	Not Found	0	0.0	
137268	Thiram	Not Found	0	Not Found	0	2	1	2.8	
2303175	Triallate	Not Found	0	Not Found	0	Not Found	0	0.0	
56359	Tributyltin oxide	Not Found	0	Not Found	0	Not Found	0	0.0	
79016	Trichloroethylene	1	1	1	1	769	3	13.9	
1582098	Trifluralin	Not Found	0	0	0	5	1	2.8	
639587	Triphenyltin chloride	Not Found	0	Not Found	0	Not Found	0	0.0	
1120214	Undecane	Not Found	0	Not Found	0	2	1	2.8	
7440622	Vanadium	Not Found	0	0	0	372	2	5.6	
7440666	Zinc	1	1	5176	3	690	3	19.4	

C-15

**Table C-4. Quantity and Prevalence Subcriterion and Primary Criterion Scores**

CAS No.	Chemical Name	Quantity			Prevalance			Primary Criterion Score
		BRS Data	TRI/NHWCS Score and Basis	Sub-Criterion Score	BRS Data	Score and Basis	Sub-Criterion Score	
630206	1,1,1,2-Tetrachloroethane	2	2T	2.0	2	1T	1.5	14.6
71556	1,1,1-Trichloroethane	2	3T	2.5	3	3T	3.0	22.9
79345	1,1,2,2-Tetrachloroethane	2	3T	2.5	2	2T	2.0	18.8
75343	1,1-Dichloroethane	2	2T	2.0	2	1T	1.5	14.6
95943	1,2,4,5-Tetrachlorobenzene	2	2N	2.0	2	1N	1.5	14.6
120821	1,2,4-Trichlorobenzene	2	2T	2.0	2	2T	2.0	16.7
95501	1,2-Dichlorobenzene	2	3T	2.5	3	2T	2.5	20.8
107062	1,2-Dichloroethane	2	3T	2.5	3	2T	2.5	20.8
528290	1,2-Dinitrobenzene	#N/A	1T	1.0	#N/A	1T	1.0	8.3
541731	1,3-Dichlorobenzene	2	1T	1.5	2	1T	1.5	12.5
99650	1,3-Dinitrobenzene	1	1T	1.0	1	1T	1.0	8.3
106467	1,4-Dichlorobenzene	2	2T	2.0	1	2T	1.5	14.6
100254	1,4-Dinitrobenzene	2	1T	1.5	1	1T	1.0	10.4
25973551	2-(2'-Hydroxy-3',5'-(di-t-amyl)phenyl)benzotriazole	#N/A	1N	1.0	#N/A	1N	1.0	8.3
119471	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	#N/A	1N	1.0	#N/A	1N	1.0	8.3
95954	2,4,5-Trichlorophenol	2	1N	1.5	2	1N	1.5	12.5
94757	2,4-D	2	1T	1.5	2	2T	2.0	14.6
51285	2,4-Dinitrophenol	2	2T	2.0	1	1T	1.0	12.5
79743	2,5-Di-(1,1-dimethylpropyl)hydroquinone	#N/A	1N	1.0	#N/A	1N	1.0	8.3
99309	2,6-Dichloro-4-nitroaniline	#N/A	1T	1.0	#N/A	1T	1.0	8.3
128370	2,6-Di-tert-butyl-p-cresol	#N/A	3N	3.0	#N/A	1N	1.0	16.7
99592	2-Methoxy-5-nitrobenzenamine	#N/A	0T	0.0	#N/A	0T	0.0	0.0
97563	2-Methyl-4-((2-methylphenyl)azo)benzenamine	#N/A	0T	0.0	#N/A	1T	1.0	4.2
91576	2-Methylnaphthalene	#N/A	1N	1.0	#N/A	1N	1.0	8.3
91941	3,3'-Dichlorobenzidine	1	1T	1.0	1	1T	1.0	8.3
119904	3,3'-Dimethoxybenzidine	1	0T	0.5	1	1T	1.0	6.3
20325400	3,3'-Dimethoxybenzidine dihydrochloride	#N/A	1T	1.0	#N/A	1T	1.0	8.3
60093	4-(Phenylazo)benzenamine	#N/A	1T	1.0	#N/A	1T	1.0	8.3
101144	4,4'-Methylenebis(2-chloroaniline)	2	1T	1.5	2	2T	2.0	14.6
101779	4,4'-Methylenebisbenzenamine	#N/A	1T	1.0	#N/A	2T	2.0	12.5
101688	4,4'-Methylenediphenyl isocyanate	#N/A	1N	1.0	#N/A	1N	1.0	8.3
101804	4,4'-Oxybisbenzenamine	#N/A	1T	1.0	#N/A	1T	1.0	8.3
96695	4,4'-Thiobis(6-tert-butyl-m-cresol)	#N/A	1N	1.0	#N/A	1N	1.0	8.3
101553	4-Bromophenyl phenyl ether	2	1N	1.5	1	1N	1.0	10.4
106489	4-Chlorophenol	#N/A	1N	1.0	#N/A	1N	1.0	8.3

**Table C-4. (continued)**

CAS No.	Chemical Name	Quantity			Prevalance			Primary Criterion Score
		BRS Data	TRI/NHWCS Score and Basis	Sub-Criterion Score	BRS Data	Score and Basis	Sub-Criterion Score	
7005723	4-Chlorophenyl phenyl ether	#N/A	1N	1.0	#N/A	1N	1.0	8.3
83329	Acenaphthene	2	1N	1.5	1	3N	2.0	14.6
208968	Acenaphthylene	2	1N	1.5	1	1N	1.0	10.4
75070	Acetaldehyde	1	3T	2.0	1	3T	2.0	16.7
107028	Acrolein	2	2T	2.0	1	2T	1.5	14.6
79061	Acrylamide	1	2T	1.5	1	2T	1.5	12.5
116063	Aldicarb	1	1T	1.0	1	1T	1.0	8.3
107186	Allyl alcohol	2	2T	2.0	2	2T	2.0	16.7
7429905	Aluminum	#N/A	3T	3.0	#N/A	3T	3.0	25.0
834128	Ametryn	#N/A	1T	1.0	#N/A	1T	1.0	8.3
120127	Anthracene	2	2T	2.0	1	2T	1.5	14.6
7440360	Antimony	2	3T	2.5	3	3T	3.0	22.9
7440382	Arsenic	2	2T	2.0	3	3T	3.0	20.8
1912249	Atrazine	#N/A	2T	2.0	#N/A	2T	2.0	16.7
569642	Basic green 4	#N/A	0T	0.0	#N/A	0T	0.0	0.0
1861401	Benefin	#N/A	1T	1.0	#N/A	1T	1.0	8.3
17804352	Benomyl	1	1T	1.0	1	1T	1.0	8.3
56038892	Benzenamine, N-(1-ethylpropyl)-3,4-dimethyl-	#N/A	1N	1.0	#N/A	1N	1.0	8.3
191242	Benzo(g,h,i)perylene	2	1N	1.5	1	1N	1.0	10.4
7440417	Beryllium	2	1T	1.5	3	2T	2.5	16.7
117817	Bis(2-ethylhexyl)phthalate	2	3T	2.5	2	3T	2.5	20.8
90948	Bis(4-(dimethylamino)phenyl)methanone	#N/A	1T	1.0	#N/A	1T	1.0	8.3
314409	Bromoacil	#N/A	1T	1.0	#N/A	1T	1.0	8.3
74839	Bromomethane	2	2T	2.0	1	2T	1.5	14.6
1689992	Bromoxynil octanoate	#N/A	1T	1.0	#N/A	1T	1.0	8.3
85687	Butyl benzyl phthalate	2	1N	1.5	2	2N	2.0	14.6
2832408	C.I. Disperse yellow 3	#N/A	1T	1.0	#N/A	1T	1.0	8.3
7440439	Cadmium	2	3T	2.5	3	3T	3.0	22.9
1563662	Carbofuran	1	1T	1.0	1	1T	1.0	8.3
79118	Chloroacetic acid	#N/A	2T	2.0	#N/A	2T	2.0	16.7
67663	Chloroform	2	3T	2.5	3	3T	3.0	22.9
5598130	Chlorpyrifos methyl	#N/A	1T	1.0	#N/A	1T	1.0	8.3
1897456	Chlorthalonil	#N/A	1T	1.0	#N/A	2T	2.0	12.5
7440473	Chromium	3	3T	3.0	3	3T	3.0	25.0
7440484	Cobalt	#N/A	3T	3.0	#N/A	3T	3.0	25.0

**Table C-4. (continued)**

CAS No.	Chemical Name	Quantity			Prevalance			Primary Criterion Score
		BRS Data	TRI/NHWCS Score and Basis	Sub-Criterion Score	BRS Data	Score and Basis	Sub-Criterion Score	
7440508	Copper	2	3T	2.5	3	3T	3.0	22.9
57125	Cyanide	2	3T	2.5	3	3T	3.0	22.9
1861321	Dacthal	#N/A	1N	1.0	#N/A	1N	1.0	8.3
1163195	Decabromodiphenyl oxide	#N/A	2T	2.0	#N/A	3T	3.0	20.8
78488	DEF	#N/A	1T	1.0	#N/A	1T	1.0	8.3
333415	Diazinon	#N/A	1T	1.0	#N/A	2T	2.0	12.5
132649	Dibenzofuran	#N/A	1T	1.0	#N/A	2T	2.0	12.5
84742	Dibutyl phthalate	2	2T	2.0	1	3T	2.0	16.7
115322	Dicofol	#N/A	1T	1.0	#N/A	1T	1.0	8.3
1675543	Diglycidal ether of Bisphenol A	#N/A	1N	1.0	#N/A	1N	1.0	8.3
60515	Dimethoate	1	1T	1.0	1	1T	1.0	8.3
117840	Di-n-octyl phthalate	2	1N	1.5	2	2N	2.0	14.6
122394	Diphenylamine	2	2T	2.0	1	2T	1.5	14.6
298044	Disulfoton	2	0N	1.0	1	1N	1.0	8.3
115297	Endosulfan	1	1N	1.0	1	1N	1.0	8.3
1031078	Endosulfan sulfate	2	0N	1.0	1	1N	1.0	8.3
959988	Endosulfan, alpha-	2	0N	1.0	1	1N	1.0	8.3
33213659	Endosulfan, beta-	2	0N	1.0	1	1N	1.0	8.3
106934	Ethylene dibromide (EDB)	2	1T	1.5	1	2T	1.5	12.5
75218	Ethylene oxide	2	2T	2.0	2	3T	2.5	18.8
2164172	Fluometuron	#N/A	1T	1.0	#N/A	1T	1.0	8.3
206440	Fluoranthene	2	1N	1.5	1	2N	1.5	12.5
86737	Fluorene	2	1N	1.5	1	3N	2.0	14.6
58899	gamma-hexachlorocyclohexane	2	1T	1.5	2	1T	1.5	12.5
76448	Heptachlor	2	1T	1.5	2	1T	1.5	12.5
1024573	Heptachlor epoxide	2	1N	1.5	1	1N	1.0	10.4
118741	Hexachlorobenzene	2	2T	2.0	1	1T	1.0	12.5
87683	Hexachlorobutadiene	2	2T	2.0	1	1T	1.0	12.5
319846	Hexachlorocyclohexane, alpha-	2	1N	1.5	1	1N	1.0	10.4
319857	Hexachlorocyclohexane, beta-	2	1N	1.5	1	1N	1.0	10.4
319868	Hexachlorocyclohexane, delta-	2	1N	1.5	1	1N	1.0	10.4
77474	Hexachlorocyclopentadiene	2	1T	1.5	1	1T	1.0	10.4
67721	Hexachloroethane	2	2T	2.0	2	2T	2.0	16.7
74908	Hydrocyanic acid	1	3T	2.0	1	2T	1.5	14.6
74884	Iodomethane	2	1T	1.5	1	1T	1.0	10.4

**Table C-4. (continued)**

CAS No.	Chemical Name	Quantity			Prevalance			Primary Criterion Score
		BRS Data	TRI/NHWCS Score and Basis	Sub-Criterion Score	BRS Data	Score and Basis	Sub-Criterion Score	
7439921	Lead	3	3T	3.0	3	3T	3.0	25.0
330552	Linuron	#N/A	1T	1.0	#N/A	1T	1.0	8.3
7439965	Manganese	#N/A	3T	3.0	#N/A	3T	3.0	25.0
7439976	Mercury	2	2T	2.0	3	2T	2.5	18.8
72435	Methoxychlor	2	0T	1.0	3	1T	2.0	12.5
298000	Methyl parathion	2	1T	1.5	1	1T	1.0	10.4
75092	Methylene chloride	2	3T	2.5	3	3T	3.0	22.9
91203	Naphthalene	2	3T	2.5	3	3T	3.0	22.9
7440020	Nickel	2	3T	2.5	3	3T	3.0	22.9
54115	Nicotinea	2	1T	1.5	1	2T	1.5	12.5
98953	Nitrobenzene	2	2T	2.0	3	2T	2.5	18.8
111659	Octane	#N/A	1N	1.0	#N/A	1N	1.0	8.3
42874033	Oxyfluorfen	#N/A	1T	1.0	#N/A	1T	1.0	8.3
56382	Parathion	2	0T	1.0	1	1T	1.0	8.3
40487421	Pendimethalin	#N/A	1T	1.0	#N/A	1T	1.0	8.3
608935	Pentachlorobenzene	2	2N	2.0	1	1N	1.0	12.5
82688	Pentachloronitrobenzene	2	1T	1.5	1	2T	1.5	12.5
87865	Pentachlorophenol	2	1T	1.5	1	2T	1.5	12.5
85018	Phenanthrene	2	2T	2.0	2	2T	2.0	16.7
108952	Phenol	2	3T	2.5	3	3T	3.0	22.9
96764	Phenol, 2,2-bis(1,1-dimethylethyl)-	#N/A	2N	2.0	#N/A	1N	1.0	12.5
732263	Phenol, 2,4,6-tris(1,1-dimethylethyl)-	#N/A	1N	1.0	#N/A	1N	1.0	8.3
599644	Phenol, 4-(1-methyl-1-phenylethyl)-	#N/A	3N	3.0	#N/A	1N	1.0	16.7
25154523	Phenol, nonyl-	#N/A	1N	1.0	#N/A	1N	1.0	8.3
92842	Phenothiazine	#N/A	1N	1.0	#N/A	1N	1.0	8.3
90437	Phenylphenol, o-	#N/A	2T	2.0	#N/A	2T	2.0	16.7
298022	Phorate	2	2N	2.0	1	1N	1.0	12.5
75445	Phosgene	1	3T	2.0	1	2T	1.5	14.6
88891	Picric acid	#N/A	2T	2.0	#N/A	1T	1.0	12.5
5468757	Pigment yellow 14	#N/A	1N	1.0	#N/A	1N	1.0	8.3
1336363	Polychlorinated biphenyls	2	1T	1.5	3	1T	2.0	14.6
	Polycyclic aromatic compounds	#N/A	3T	3.0	#N/A	3T	3.0	25.0
9003536	Polystyrene	#N/A	1N	1.0	#N/A	1N	1.0	8.3
129000	Pyrene	2	1N	1.5	1	3N	2.0	14.6
1929824	Pyridine, 2-chloro-6-(trichloromethyl)-	#N/A	1T	1.0	#N/A	1T	1.0	8.3

**Table C-4. (continued)**

CAS No.	Chemical Name	Quantity			Prevalance			Primary Criterion Score
		BRS Data	TRI/NHWCS Score and Basis	Sub-Criterion Score	BRS Data	Score and Basis	Sub-Criterion Score	
7782492	Selenium	2	1T	1.5	3	2T	2.5	16.7
7440224	Silver	2	2T	2.0	3	3T	3.0	20.8
122349	Simazine	#N/A	1T	1.0	#N/A	1T	1.0	8.3
13071799	Terbufos	#N/A	2N	2.0	#N/A	1N	1.0	12.5
127184	Tetrachloroethylene	2	3T	2.5	3	3T	3.0	22.9
961115	Tetrachlorvinphos	#N/A	1T	1.0	#N/A	1T	1.0	8.3
59669260	Thiodicarb	1	1T	1.0	1	1T	1.0	8.3
137268	Thiram	1	1T	1.0	1	2T	1.5	10.4
2303175	Triallate	1	1T	1.0	1	1T	1.0	8.3
56359	Tributyltin oxide	#N/A	1T	1.0	#N/A	1T	1.0	8.3
79016	Trichloroethylene	2	3T	2.5	3	3T	3.0	22.9
1582098	Trifluralin	#N/A	1T	1.0	#N/A	2T	2.0	12.5
639587	Triphenyltin chloride	#N/A	1T	1.0	#N/A	1T	1.0	8.3
1120214	Undecane	#N/A	1N	1.0	#N/A	1N	1.0	8.3
7440622	Vanadium	2	1T	1.5	3	2T	2.5	16.7
7440666	Zinc	2	3T	2.5	3	3T	3.0	22.9

N = Score Based on NHWCS Data

T = Score Based on TRI Data

**Table C-5. RCRA Programmatic Concerns Subcriterion and Primary Criterion Scores**

CAS No.	Chemical Name	RCRA Programmatic Concerns					LDR	RCRA 507	Sub-criterion Score	Primary Criterion Score				
		For DNAPL, MACT and Hard to Treat			For TC List and App. VII									
		DNAPL	MACT / BIF	Hard to Treat	TC List	App. VII								
630206	1,1,1,2-Tetrachloroethane	✓				✓	✓	✓	4	25.0				
71556	1,1,1-Trichloroethane	✓				✓	✓	✓	4	25.0				
79345	1,1,2,2-Tetrachloroethane	✓				✓	✓	✓	4	25.0				
75343	1,1-Dichloroethane	✓					✓	✓	4	25.0				
95943	1,2,4,5-Tetrachlorobenzene					✓	✓	✓	3	18.8				
120821	1,2,4-Trichlorobenzene	✓					✓	✓	4	25.0				
95501	1,2-Dichlorobenzene	✓				✓	✓	✓	4	25.0				
107062	1,2-Dichloroethane	✓			✓	✓	✓	✓	4	25.0				
528290	1,2-Dinitrobenzene								0	0.0				
541731	1,3-Dichlorobenzene	✓					✓	✓	4	25.0				
99650	1,3-Dinitrobenzene					✓		✓	3	18.8				
106467	1,4-Dichlorobenzene	✓			✓	✓	✓	✓	4	25.0				
100254	1,4-Dinitrobenzene						✓		2	12.5				
25973551	2-(2'-Hydroxy-3',5'-(di-t-amyl)phenyl)benzotriazole								0	0.0				
119471	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)					✓			3	18.8				
95954	2,4,5-Trichlorophenol					✓	✓	✓	3	18.8				
94757	2,4-D					✓		✓	3	18.8				
51285	2,4-Dinitrophenol	✓				✓	✓	✓	4	25.0				
79743	2,5-Di-(1,1-dimethylpropyl)hydroquinone								0	0.0				
99309	2,6-Dichloro-4-nitroaniline								0	0.0				
128370	2,6-Di-tert-butyl-p-cresol								0	0.0				
99592	2-Methoxy-5-nitrobenzenamine								0	0.0				
97563	2-Methyl-4-((2-methylphenyl)azo)benzenamine								0	0.0				
91576	2-Methylnaphthalene	✓						✓	4	25.0				
91941	3,3'-Dichlorobenzidine							✓	1	6.3				
119904	3,3'-Dimethoxybenzidine							✓	1	6.3				
20325400	3,3'-Dimethoxybenzidine dihydrochloride								0	0.0				
60093	4-(Phenylazo)benzenamine								0	0.0				
101144	4,4'-Methylenebis(2-chloroaniline)							✓	✓	2	12.5			
101779	4,4'-Methylenebisbenzenamine								0	0.0				

(continued)

Table C-5. (continued)

CAS No.	Chemical Name	RCRA Programmatic Concerns					LDR	RCRA 507	Sub-criterion Score	Primary Criterion Score				
		For DNAPL, MACT and Hard to Treat			For TC List and App. VII									
		DNAPL	MACT / BIF	Hard to Treat	TC List	App. VII								
101688	4,4'-Methylenediphenyl isocyanate								0	0.0				
101804	4,4'-Oxybisbenzenamine								0	0.0				
96695	4,4'-Thiobis(6-tert-butyl-m-cresol)								0	0.0				
101553	4-Bromophenyl phenyl ether						✓	✓	2	12.5				
106489	4-Chlorophenol					✓			3	18.8				
7005723	4-Chlorophenyl phenyl ether	✓						✓	4	25.0				
83329	Acenaphthene	✓					✓	✓	4	25.0				
208968	Acenaphthylene					✓	✓	✓	3	18.8				
75070	Acetaldehyde						✓		1	6.3				
107028	Acrolein						✓	✓	2	12.5				
79061	Acrylamide					✓	✓	✓	3	18.8				
116063	Aldicarb							✓	1	6.3				
107186	Allyl alcohol							✓	1	6.3				
7429905	Aluminum								0	0.0				
834128	Ametryn								0	0.0				
120127	Anthracene	✓					✓	✓	4	25.0				
7440360	Antimony		✓			✓	✓	✓	4	25.0				
7440382	Arsenic		✓	✓	✓	✓	✓	✓	4	25.0				
1912249	Atrazine								0	0.0				
569642	Basic green 4								0	0.0				
1861401	Benefin								0	0.0				
17804352	Benomyl					✓	✓	✓	3	18.8				
56038892	Benzenamine, N-(1-ethylpropyl)-3,4-dimethyl-								0	0.0				
191242	Benzo(g,h,i)perylene						✓	✓	2	12.5				
7440417	Beryllium			✓			✓	✓	4	25.0				
117817	Bis(2-ethylhexyl)phthalate	✓					✓	✓	4	25.0				
90948	Bis(4-(dimethylamino)phenyl)methanone								0	0.0				
314409	Bromoacil								0	0.0				
74839	Bromomethane					✓	✓	✓	3	18.8				
1689992	Bromoxynil octanoate								0	0.0				
85687	Butyl benzyl phthalate	✓					✓	✓	4	25.0				

(continued)

**Table C-5. (continued)**

CAS No.	Chemical Name	RCRA Programmatic Concerns					LDR	RCRA 507	Sub-criterion Score	Primary Criterion Score				
		For DNAPL, MACT and Hard to Treat			For TC List and App. VII									
		DNAPL	MACT / BIF	Hard to Treat	TC List	App. VII								
2832408	C.I. Disperse yellow 3								0	0.0				
7440439	Cadmium		✓	✓	✓	✓	✓	✓	4	25.0				
1563662	Carbofuran					✓	✓	✓	3	18.8				
79118	Chloroacetic acid								0	0.0				
67663	Chloroform	✓			✓	✓	✓	✓	4	25.0				
5598130	Chlorpyrifos methyl								0	0.0				
1897456	Chlorthalonal								0	0.0				
7440473	Chromium		✓		✓	✓	✓	✓	4	25.0				
7440484	Cobalt							✓	1	6.3				
7440508	Copper							✓	1	6.3				
57125	Cyanide					✓	✓	✓	3	18.8				
1861321	Dacthal								0	0.0				
1163195	Decabromodiphenyl oxide								0	0.0				
78488	DEF								0	0.0				
333415	Diazinon								0	0.0				
132649	Dibenzofuran							✓	1	6.3				
84742	Dibutyl phthalate	✓					✓	✓	4	25.0				
115322	Dicofol								0	0.0				
1675543	Diglycidal ether of Bisphenol A					✓			3	18.8				
60515	Dimethoate							✓	1	6.3				
117840	Di-n-octyl phthalate	✓					✓	✓	4	25.0				
122394	Diphenylamine					✓	✓	✓	3	18.8				
298044	Disulfoton						✓	✓	2	12.5				
115297	Endosulfan							✓	1	6.3				
1031078	Endosulfan sulfate						✓	✓	2	12.5				
959988	Endosulfan, alpha-						✓	✓	2	12.5				
33213659	Endosulfan, beta-						✓	✓	2	12.5				
106934	Ethylene dibromide (EDB)	✓				✓	✓	✓	4	25.0				
75218	Ethylene oxide						✓	✓	2	12.5				

(continued)

Table C-5. (continued)

CAS No.	Chemical Name	RCRA Programmatic Concerns					LDR	RCRA 507	Sub-criterion Score	Primary Criterion Score				
		For DNAPL, MACT and Hard to Treat			For TC List and App. VII									
		DNAPL	MACT / BIF	Hard to Treat	TC List	App. VII								
2164172	Fluometuron								0	0.0				
206440	Fluoranthene	✓				✓	✓	✓	4	25.0				
86737	Fluorene	✓					✓	✓	4	25.0				
58899	gamma-hexachlorocyclohexane				✓	✓	✓	✓	3	18.8				
76448	Heptachlor				✓	✓	✓	✓	3	18.8				
1024573	Heptachlor epoxide						✓	✓	2	12.5				
118741	Hexachlorobenzene				✓	✓	✓	✓	3	18.8				
87683	Hexachlorobutadiene	✓			✓	✓	✓	✓	4	25.0				
319846	Hexachlorocyclohexane, alpha-					✓	✓	✓	3	18.8				
319857	Hexachlorocyclohexane, beta-					✓	✓	✓	3	18.8				
319868	Hexachlorocyclohexane, delta-					✓	✓	✓	3	18.8				
77474	Hexachlorocyclopentadiene	✓				✓	✓	✓	4	25.0				
67721	Hexachloroethane				✓	✓	✓	✓	3	18.8				
74908	Hydrocyanic acid					✓		✓	3	18.8				
74884	Iodomethane	✓					✓	✓	4	25.0				
7439921	Lead		✓		✓	✓	✓	✓	4	25.0				
330552	Linuron								0	0.0				
7439965	Manganese								0	0.0				
7439976	Mercury		✓	✓	✓	✓	✓	✓	4	25.0				
72435	Methoxychlor				✓		✓	✓	3	18.8				
298000	Methyl parathion						✓	✓	2	12.5				
75092	Methylene chloride	✓				✓	✓	✓	4	25.0				
91203	Naphthalene	✓				✓	✓	✓	4	25.0				
7440020	Nickel					✓		✓	3	18.8				
54115	Nicotinea							✓	1	6.3				
98953	Nitrobenzene	✓			✓	✓	✓	✓	4	25.0				
111659	Octane								0	0.0				
42874033	Oxyfluorfen								0	0.0				
56382	Parathion	✓					✓	✓	4	25.0				
40487421	Pendimethalin								0	0.0				

(continued)

Table C-5. (continued)

CAS No.	Chemical Name	RCRA Programmatic Concerns					LDR	RCRA 507	Sub-criterion Score	Primary Criterion Score				
		For DNAPL, MACT and Hard to Treat			For TC List and App. VII									
		DNAPL	MACT / BIF	Hard to Treat	TC List	App. VII								
608935	Pentachlorobenzene					✓	✓	✓	3	18.8				
82688	Pentachloronitrobenzene						✓	✓	2	12.5				
87865	Pentachlorophenol	✓			✓	✓	✓	✓	4	25.0				
85018	Phenanthrene						✓	✓	2	12.5				
108952	Phenol	✓				✓	✓	✓	4	25.0				
96764	Phenol, 2,2-bis(1,1-dimethylethyl)-					✓			3	18.8				
732263	Phenol, 2,4,6-tris(1,1-dimethylethyl)-					✓			3	18.8				
599644	Phenol, 4-(1-methyl-1-phenylethyl)-					✓			3	18.8				
25154523	Phenol, nonyl-					✓			3	18.8				
92842	Phenothiazine								0	0.0				
90437	Phenylphenol, o-					✓			3	18.8				
298022	Phorate					✓	✓	✓	3	18.8				
75445	Phosgene					✓		✓	3	18.8				
88891	Picric acid								0	0.0				
5468757	Pigment yellow 14								0	0.0				
1336363	Polychlorinated biphenyls			✓			✓	✓	4	25.0				
	Polycyclic aromatic compounds	✓				✓	✓	✓	4	25.0				
9003536	Polystyrene								0	0.0				
129000	Pyrene	✓					✓	✓	4	25.0				
1929824	Pyridine, 2-chloro-6-(trichloromethyl)-								0	0.0				
7782492	Selenium				✓		✓	✓	3	18.8				
7440224	Silver		✓		✓			✓	4	25.0				
122349	Simazine								0	0.0				
13071799	Terbufos								0	0.0				
127184	Tetrachloroethylene	✓			✓	✓	✓	✓	4	25.0				
961115	Tetrachlorvinphos								0	0.0				
59669260	Thiodicarb						✓	✓	2	12.5				
137268	Thiram							✓	1	6.3				
2303175	Triallate						✓	✓	2	12.5				
56359	Tributyltin oxide								0	0.0				

(continued)

**Table C-5. (continued)**

CAS No.	Chemical Name	RCRA Programmatic Concerns					LDR	RCRA 507	Sub-criterion Score	Primary Criterion Score				
		For DNAPL, MACT and Hard to Treat			For TC List and App. VII									
		DNAPL	MACT / BIF	Hard to Treat	TC List	App. VII								
79016	Trichloroethylene	✓			✓	✓	✓	✓	4	25.0				
1582098	Trifluralin								0	0.0				
639587	Triphenyltin chloride								0	0.0				
1120214	Undecane								0	0.0				
7440622	Vanadium							✓	1	6.3				
7440666	Zinc						✓	✓	2	12.5				

## **Appendix D**

### **TRI, NHWCS, and BRS Data Used In Evaluating Quantity and Prevalence Criterion**

**Table 1a. Toxic Release Inventory (TRI): Quantity Reported for Each Chemical**

TRI Waste Quantities, 1995			
CAS Number	Chemical Name	1995 TRI Quantity (pounds)	Data Preference Indicator
630206	1,1,1,2-Tetrachloroethane	6,965,205	
71556	1,1,1-Trichloroethane	70,874,403	
79345	1,1,2,2-Tetrachloroethane	23,186,051	
75343	1,1-Dichloroethane	2,943,149	
95943	1,2,4,5-Tetrachlorobenzene	NA	
120821	1,2,4-Trichlorobenzene	1,634,536	
95501	1,2-Dichlorobenzene	12,499,204	
107062	1,2-Dichloroethane	219,409,701	
528290	1,2-Dinitrobenzene	444,292	
541731	1,3-Dichlorobenzene	10,358	
99650	1,3-Dinitrobenzene	765,222	
106467	1,4-Dichlorobenzene	6,137,434	
100254	1,4-Dinitrobenzene	29,626	
25973551	2-(2'-Hydroxy-3',5'-(di-t-amyl)phenyl)benzotriazole	NA	Y
119471	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	NA	
95954	2,4,5-Trichlorophenol	NA	
94757	2,4-D	99,380	
51285	2,4-Dinitrophenol	1,716,941	
79743	2,5-Di-(1,1-dimethylpropyl)hydroquinone	NA	
99309	2,6-Dichloro-4-nitroaniline	75	
128370	2,6-Di-tert-butyl-p-cresol	NA	
99592	2-Methoxy-5-nitrobenzenamine	NA	Y
97563	2-Methyl-4-((2-methylphenyl)azo)benzenamine	0	Y
91576	2-Methylnaphthalene	NA	
91941	3,3'-Dichlorobenzidine	40,000	
119904	3,3'-Dimethoxybenzidine	0	Y
20325400	3,3'-Dimethoxybenzidine dihydrochloride	51	Y
60093	4-(Phenylazo)benzenamine	3	
101144	4,4'-Methylenebis(2-chloroaniline)	8,982	Y
101779	4,4'-Methylenebisbenzenamine	253,267	Y
101688	4,4'-Methylenediphenyl isocyanate	NA	
101804	4,4'-Oxybisbenzenamine	385,338	
96695	4,4'-Thiobis(6-tert-butyl-m-cresol)	NA	
101553	4-Bromophenyl phenyl ether	NA	
106489	4-Chlorophenol	NA	
7005723	4-Chlorophenyl phenyl ether	NA	
83329	Acenaphthene	NA	
208968	Acenaphthylene	NA	Y
75070	Acetaldehyde	26,434,825	
107028	Acrolein	9,063,663	
79061	Acrylamide	6,685,877	
116063	Aldicarb	20,597	
107186	Allyl alcohol	4,220,949	
7429905	Aluminum	83,062,383	

(continued)

**Table 1a. (continued)****TRI Waste Quantities, 1995**

CAS Number	Chemical Name	1995 TRI Quantity (pounds)	Data Preference Indicator
834128	Ametryn	121,257	
120127	Anthracene	2,236,075	
7440360	Antimony	23,111,068	
7440382	Arsenic	8,359,095	
1912249	Atrazine	1,474,847	
569642	Basic green 4	NA	
1861401	Benefin	24,575	
17804352	Benomyl	604,000	
56038892	Benzenamine, N-(1-ethylpropyl)-3,4-dimethyl-	NA	Y
191242	Benzo(g,h,i)perylene	NA	Y
7440417	Beryllium	124,700	
117817	Bis(2-ethylhexyl)phthalate	12,289,772	
90948	Bis(4-(dimethylamino)phenyl)methanone	436	Y
314409	Bromoacil	58,521	
74839	Bromomethane	5,146,452	
1689992	Bromoxynil octanoate	13,742	
85687	Butyl benzyl phthalate	NA	
2832408	C.I. Disperse yellow 3	2,122	Y
7440439	Cadmium	13,836,981	
1563662	Carbofuran	47,662	
79118	Chloroacetic acid	1,345,933	
67663	Chloroform	42,061,753	
5598130	Chlorpyrifos methyl	12,495	
1897456	Chlorthalonil	270,485	
7440473	Chromium	427,464,252	
7440484	Cobalt	14,012,126	
7440508	Copper	1,628,767,983	
57125	Cyanide	15,027,478b	
1861321	Dacthal	NA	
1163195	Decabromodiphenyl oxide	2,193,279	Y
78488	DEF	2,857	
333415	Diazinon	94,937	
132649	Dibenzofuran	526,361	
84742	Dibutyl phthalate	2,142,823	
115322	Dicofol	495	
1675543	Diglycidal ether of Bisphenol A	NA	Y
60515	Dimethoate	2,192	
117840	Di-n-octyl phthalate	NA	Y
122394	Diphenylamine	2,096,641	
298044	Disulfoton	NA	
115297	Endosulfan	NA	
1031078	Endosulfan sulfate	NA	
959988	Endosulfan, alpha-	NA	
33213659	Endosulfan, beta-	NA	
106934	Ethylene dibromide (EDB)	106,977	

(continued)

**Table 1a. (continued)**

TRI Waste Quantities, 1995			
CAS Number	Chemical Name	1995 TRI Quantity (pounds)	Data Preference Indicator
75218	Ethylene oxide	6,558,660	
2164172	Fluometuron	19,257	
206440	Fluoranthene	NA	
86737	Fluorene	NA	
58899	gamma-hexachlorocyclohexane	3,155	
76448	Heptachlor	4,701	
1024573	Heptachlor epoxide	NA	
118741	Hexachlorobenzene	3,307,411	
87683	Hexachlorobutadiene	7,077,331	
319846	Hexachlorocyclohexane, alpha-	NA	
319857	Hexachlorocyclohexane, beta-	NA	Y
319868	Hexachlorocyclohexane, delta-	NA	
77474	Hexachlorocyclopentadiene	300,623	
67721	Hexachloroethane	6,298,214	
74908	Hydrocyanic acid	66,735,544	
74884	Iodomethane	38,876	Y
7439921	Lead	1,122,951,531	
330552	Linuron	1,990	
7439965	Manganese	418,984,302	
7439976	Mercury	1,366,834	
72435	Methoxychlor	0	
298000	Methyl parathion	2,684	
75092	Methylene chloride	145,600,835	
91203	Naphthalene	36,625,481	
7440020	Nickel	255,948,864	
54115	Nicotine <sup>a</sup>	776,061a	Y
98953	Nitrobenzene	7,502,494	
111659	Octane	NA	
42874033	Oxyfluorfen	15,223	
56382	Parathion	0	
40487421	Pendimethalin	197,574	
608935	Pentachlorobenzene	NA	
82688	Pentachloronitrobenzene	761,442	
87865	Pentachlorophenol	231,473	
85018	Phenanthrene	1,379,518	
108952	Phenol	116,297,653	
96764	Phenol, 2,2-bis(1,1-dimethylethyl)-	NA	Y
732263	Phenol, 2,4,6-tris(1,1-dimethylethyl)-	NA	
599644	Phenol, 4-(1-methyl-1-phenylethyl)-	NA	Y
25154523	Phenol, nonyl-	NA	
92842	Phenothiazine	NA	Y
90437	Phenylphenol, o-	1,035,290	
298022	Phorate	NA	
75445	Phosgene	15,494,268	
88891	Picric acid	1,364,269	Y

(continued)

**Table 1a. (continued)****TRI Waste Quantities, 1995**

<b>CAS Number</b>	<b>Chemical Name</b>	<b>1995 TRI Quantity (pounds)</b>	<b>Data Preference Indicator</b>
5468757	Pigment yellow 14	NA	
1336363	Polychlorinated biphenyls	98,616	
N590	Polycyclic aromatic compounds	22,623,435	
9003536	Polystyrene	NA	
129000	Pyrene	NA	Y
1929824	Pyridine, 2-chloro-6-(trichloromethyl)-	43,000	
7782492	Selenium	991,705	
7440224	Silver	7,185,772	
122349	Simazine	200,236	
13071799	Terbufos	NA	
127184	Tetrachloroethylene	90,967,904	
961115	Tetrachlorvinphos	56,794	
59669260	Thiodicarb	43,299	
137268	Thiram	157,903	
2303175	Triallate	189,744	
56359	Tributyltin oxide	8,455	
79016	Trichloroethylene	173,495,230	
1582098	Trifluralin	211,406	
639587	Triphenyltin chloride	2,555	
1120214	Undecane	NA	
7440622	Vanadium	258,857	Y
7440666	Zinc	677,045,146	
<i>Total Chemicals in Matrix</i>		156	

NA=not available

<sup>a</sup>Category listing for nicotine and salts<sup>b</sup>Category listing for cyanide compounds<sup>c</sup>Quantity calculated by summing across waste quantities for individual PBT chemicals

**Table 1b. Toxic Release Inventory (TRI): Number of Generators Reporting Each Chemical**

TRI Facilities, 1995			
CAS Number	Chemical Name	1995 Facilities	Data Preference Indicator
630206	1,1,1,2-Tetrachloroethane	7	
71556	1,1,1-Trichloroethane	712	
79345	1,1,2,2-Tetrachloroethane	16	
75343	1,1-Dichloroethane	5	
95943	1,2,4,5-Tetrachlorobenzene	NA	
120821	1,2,4-Trichlorobenzene	27	
95501	1,2-Dichlorobenzene	26	
107062	1,2-Dichloroethane	80	
528290	1,2-Dinitrobenzene	3	
541731	1,3-Dichlorobenzene	6	
99650	1,3-Dinitrobenzene	2	
106467	1,4-Dichlorobenzene	18	
100254	1,4-Dinitrobenzene	1	
25973551	2-(2'-Hydroxy-3',5'-(di-t-amyl)phenyl)benzotriazole	NA	Y
119471	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	NA	
95954	2,4,5-Trichlorophenol	NA	
94757	2,4-D	24	
51285	2,4-Dinitrophenol	4	
79743	2,5-Di-(1,1-dimethylpropyl)hydroquinone	NA	
99309	2,6-Dichloro-4-nitroaniline	4	
128370	2,6-Di-tert-butyl-p-cresol	NA	
99592	2-Methoxy-5-nitrobenzenamine	NA	Y
97563	2-Methyl-4-((2-methylphenyl)azo)benzenamine	1	Y
91576	2-Methylnaphthalene	NA	
91941	3,3'-Dichlorobenzidine	3	
119904	3,3'-Dimethoxybenzidine	3	Y
20325400	3,3'-Dimethoxybenzidine dihydrochloride	5	Y
60093	4-(Phenylazo)benzenamine	1	
101144	4,4'-Methylenebis(2-chloroaniline)	17	Y
101779	4,4'-Methylenebisbenzenamine	25	Y
101688	4,4'-Methylenediphenyl isocyanate	NA	
101804	4,4'-Oxybisbenzenamine	3	
96695	4,4'-Thiobis(6-tert-butyl-m-cresol)	NA	
101553	4-Bromophenyl phenyl ether	NA	
106489	4-Chlorophenol	NA	
7005723	4-Chlorophenyl phenyl ether	NA	
83329	Acenaphthene	NA	
208968	Acenaphthylene	NA	Y
75070	Acetaldehyde	225	
107028	Acrolein	19	
79061	Acrylamide	74	

(continued)

**Table 1b. (continued)**

TRI Facilities, 1995			
CAS Number	Chemical Name	1995 Facilities	Data Preference Indicator
116063	Aldicarb	2	
107186	Allyl alcohol	30	
7429905	Aluminum	264	
834128	Ametryn	5	
120127	Anthracene	65	
7440360	Antimony	596	
7440382	Arsenic	379	
1912249	Atrazine	17	
569642	Basic green 4	NA	
1861401	Benefin	7	
17804352	Benomyl	2	
56038892	Benzenamine, N-(1-ethylpropyl)-3,4-dimethyl-	NA	Y
191242	Benzo(g,h,i)perylene	NA	Y
7440417	Beryllium	12	
117817	Bis(2-ethyhexyl)phthalate	243	
90948	Bis(4-(dimethylamino)phenyl)methanone	1	Y
314409	Bromoacil	4	
74839	Bromomethane	33	
1689992	Bromoxynil octanoate	4	
85687	Butyl benzyl phthalate	NA	
2832408	C.I. Disperse yellow 3	1	Y
7440439	Cadmium	147	
1563662	Carbofuran	7	
79118	Chloroacetic acid	29	
67663	Chloroform	159	
5598130	Chlorpyrifos methyl	4	
1897456	Chlorthalonil	24	
7440473	Chromium	2,883	
7440484	Cobalt	415	
7440508	Copper	3,396	
57125	Cyanide	229	
1861321	Dacthal	NA	
1163195	Decabromodiphenyl oxide	110	Y
78488	DEF	2	
333415	Diazinon	26	
132649	Dibenzofuran	33	
84742	Dibutyl phthalate	108	
115322	Dicofol	4	
1675543	Diglycidal ether of Bisphenol A	NA	Y
60515	Dimethoate	4	
117840	Di-n-octyl phthalate	NA	Y
122394	Diphenylamine	21	

(continued)

**Table 1b. (continued)**

TRI Facilities, 1995			
CAS Number	Chemical Name	1995 Facilities	Data Preference Indicator
298044	Disulfoton	NA	
115297	Endosulfan	NA	
1031078	Endosulfan sulfate	NA	
959988	Endosulfan, alpha-	NA	
33213659	Endosulfan, beta-	NA	
106934	Ethylene dibromide (EDB)	19	
75218	Ethylene oxide	129	
2164172	Fluometuron	5	
206440	Fluoranthene	NA	
86737	Fluorene	NA	
58899	gamma-hexachlorocyclohexane	9	
76448	Heptachlor	1	
1024573	Heptachlor epoxide	NA	
118741	Hexachlorobenzene	9	
87683	Hexachlorobutadiene	7	
319846	Hexachlorocyclohexane, alpha-	NA	
319857	Hexachlorocyclohexane, beta-	NA	Y
319868	Hexachlorocyclohexane, delta-	NA	
77474	Hexachlorocyclopentadiene	4	
67721	Hexachloroethane	17	
74908	Hydrocyanic acid	45	
74884	Iodomethane	6	Y
7439921	Lead	1,499	
330552	Linuron	4	
7439965	Manganese	1,885	
7439976	Mercury	32	
72435	Methoxychlor	2	
298000	Methyl parathion	4	
75092	Methylene chloride	865	
91203	Naphthalene	505	
7440020	Nickel	2,373	
54115	Nicotine <sup>a</sup>	15	Y
98953	Nitrobenzene	16	
111659	Octane	NA	
42874033	Oxyfluorfen	2	
56382	Parathion	2	
40487421	Pendimethalin	5	
608935	Pentachlorobenzene	NA	
82688	Pentachloronitrobenzene	10	
87865	Pentachlorophenol	36	
85018	Phenanthrene	26	
108952	Phenol	686	

(continued)

**Table 1b. (continued)**

TRI Facilities, 1995			
CAS Number	Chemical Name	1995 Facilities	Data Preference Indicator
96764	Phenol, 2,2-bis(1,1-dimethylethyl)-	NA	Y
732263	Phenol, 2,4,6-tris(1,1-dimethylethyl)-	NA	
599644	Phenol, 4-(1-methyl-1-phenylethyl)-	NA	Y
25154523	Phenol, nonyl-	NA	
92842	Phenothiazine	NA	Y
90437	Phenylphenol, o-	13	
298022	Phorate	NA	
75445	Phosgene	27	
88891	Picric acid	9	Y
5468757	Pigment yellow 14	NA	Y
1336363	Polychlorinated biphenyls	7	
N590	Polycyclic aromatic compounds	123	
9003536	Polystyrene	NA	Y
129000	Pyrene	NA	
1929824	Pyridine, 2-chloro-6-(trichloromethyl)-	3	
7782492	Selenium	32	
7440224	Silver	120	
122349	Simazine	7	
13071799	Terbufos	NA	
127184	Tetrachloroethylene	415	
961115	Tetrachlorvinphos	4	
59669260	Thiodicarb	2	
137268	Thiram	52	
2303175	Triallate	2	
56359	Tributyltin oxide	2	
79016	Trichloroethylene	701	
1582098	Trifluralin	19	
639587	Triphenyltin chloride	1	
1120214	Undecane	NA	Y
7440622	Vanadium	14	
7440666	Zinc	2,403	
<i>Total Chemicals in Matrix</i>		156	

NA=not available

<sup>a</sup>Category listing for nicotine and salts<sup>b</sup>Category listing for cyanide compounds<sup>c</sup>Quantity calculated by summing across waste quantities for individual PBT chemicals

**Table 2a. National Hazardous Waste Constituent Survey (NHWCS): Quantity Data**

NHWCS Waste Quantities			
CAS Number	Chemical Name	Constituent Survey Quantity (pounds)	Data Preference Indicator
630206	1,1,1,2-Tetrachloroethane	2,053,161	
71556	1,1,1-Trichloroethane	9,643,468	
79345	1,1,2,2-Tetrachloroethane	10,341,488	
75343	1,1-Dichloroethane	1,559,854	
95943	1,2,4,5-Tetrachlorobenzene	221,883	
120821	1,2,4-Trichlorobenzene	478,219	
95501	1,2-Dichlorobenzene	1,048,860	
107062	1,2-Dichloroethane	26,873,111	
528290	1,2-Dinitrobenzene	NA	
541731	1,3-Dichlorobenzene	33	
99650	1,3-Dinitrobenzene	NA	
106467	1,4-Dichlorobenzene	225,913	
100254	1,4-Dinitrobenzene	NA	
25973551	2-(2'-Hydroxy-3',5'-(di-t-amyl)phenyl)benzotriazole	406	Y
119471	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	5	
95954	2,4,5-Trichlorophenol	35	
94757	2,4-D	27,668	
51285	2,4-Dinitrophenol	962,518	
79743	2,5-Di-(1,1-dimethylpropyl)hydroquinone	17	
99309	2,6-Dichloro-4-nitroaniline	NA	
128370	2,6-Di-tert-butyl-p-cresol	8,799,033	
99592	2-Methoxy-5-nitrobenzenamine	NA	Y
97563	2-Methyl-4-((2-methylphenyl)azo)benzenamine	NA	Y
91576	2-Methylnaphthalene	29	
91941	3,3'-Dichlorobenzidine	58	
119904	3,3'-Dimethoxybenzidine	NA	Y
20325400	3,3'-Dimethoxybenzidine dihydrochloride	NA	Y
60093	4-(Phenylazo)benzenamine	NA	
101144	4,4'-Methylenebis(2-chloroaniline)	0	Y
101779	4,4'-Methylenebisbenzenamine	22,632	Y
101688	4,4'-Methylenediphenyl isocyanate	22,010	
101804	4,4'-Oxybisbenzenamine	NA	
96695	4,4'-Thiobis(6-tert-butyl-m-cresol)	125	
101553	4-Bromophenyl phenyl ether	29	
106489	4-Chlorophenol	1,069	
7005723	4-Chlorophenyl phenyl ether	29	
83329	Acenaphthene	34,629	
208968	Acenaphthylene	10,551	Y
75070	Acetaldehyde	2,513,588	
107028	Acrolein	242,906	
79061	Acrylamide	5,428,292	

(continued)

**Table 2a. (continued)**

NHWCS Waste Quantities			
CAS Number	Chemical Name	Constituent Survey Quantity (pounds)	Data Preference Indicator
116063	Aldicarb	NA	
107186	Allyl alcohol	170,158	
7429905	Aluminum	320,736	
834128	Ametryn	NA	
120127	Anthracene	24,315	
7440360	Antimony	4,224,522	
7440382	Arsenic	3,872,583	
1912249	Atrazine	26,581	
569642	Basic green 4	NA	
1861401	Benefin	NA	
17804352	Benomyl	NA	
56038892	Benzenamine, N-(1-ethylpropyl)-3,4-dimethyl-	86,244	Y
191242	Benzo(g,h,i)perylene	35	Y
7440417	Beryllium	1,081	
117817	Bis(2-ethylhexyl)phthalate	201,574	
90948	Bis(4-(dimethylamino)phenyl)methanone	NA	Y
314409	Bromoacil	NA	
74839	Bromomethane	6,229	
1689992	Bromoxynil octanoate	NA	
85687	Butyl benzyl phthalate	34,634	
2832408	C.I. Disperse yellow 3	NA	Y
7440439	Cadmium	2,956,983	
1563662	Carbofuran	NA	
79118	Chloroacetic acid	NA	
67663	Chloroform	13,049,576	
5598130	Chlorpyrifos methyl	NA	
1897456	Chlorthalonil	619	
7440473	Chromium	8,043,236	
7440484	Cobalt	9,409	
7440508	Copper	561,264	
57125	Cyanide	4,424,617	
1861321	Dacthal	275	
1163195	Decabromodiphenyl oxide	NA	Y
78488	DEF	NA	
333415	Diazinon	NA	
132649	Dibenzofuran	29	
84742	Dibutyl phthalate	27,916	
115322	Dicofol	NA	
1675543	Diglycidal ether of Bisphenol A	117	Y
60515	Dimethoate	NA	
117840	Di-n-octyl phthalate	97,753	Y
122394	Diphenylamine	2,695,192	

(continued)

**Table 2a. (continued)**

NHWCS Waste Quantities			
CAS Number	Chemical Name	Constituent Survey Quantity (pounds)	Data Preference Indicator
298044	Disulfoton	0	
115297	Endosulfan	910	
1031078	Endosulfan sulfate	1	
959988	Endosulfan, alpha-	1	
33213659	Endosulfan, beta-	1	
106934	Ethylene dibromide (EDB)	151	
75218	Ethylene oxide	168,361	
2164172	Fluometuron	NA	
206440	Fluoranthene	299	
86737	Fluorene	54,176	
58899	gamma-hexachlorocyclohexane	17,856	
76448	Heptachlor	5	
1024573	Heptachlor epoxide	4	
118741	Hexachlorobenzene	1,369,941	
87683	Hexachlorobutadiene	3,131,152	
319846	Hexachlorocyclohexane, alpha-	17,454	
319857	Hexachlorocyclohexane, beta-	17,427	Y
319868	Hexachlorocyclohexane, delta-	17,449	
77474	Hexachlorocyclopentadiene	1,852	
67721	Hexachloroethane	1,477,466	
74908	Hydrocyanic acid	15,320,184	
74884	Iodomethane	60	Y
7439921	Lead	415,698,947	
330552	Linuron	NA	
7439965	Manganese	1,413,758	
7439976	Mercury	8,040,742	
72435	Methoxychlor	13,017	
298000	Methyl parathion	1	
75092	Methylene chloride	33,849,330	
91203	Naphthalene	1,521,343	
7440020	Nickel	1,965,068	
54115	Nicotine <sup>a</sup>	NA	Y
98953	Nitrobenzene	1,092,619	
111659	Octane	1,809	
42874033	Oxyfluorfen	NA	
56382	Parathion	NA	
40487421	Pendimethalin	1,755,922	
608935	Pentachlorobenzene	190,427	
82688	Pentachloronitrobenzene	NA	
87865	Pentachlorophenol	130,579	
85018	Phenanthrene	448,213	
108952	Phenol	13,507,679	

(continued)

**Table 2a. (continued)**

NHWCS Waste Quantities				
CAS Number	Chemical Name	Constituent Survey Quantity (pounds)	Data Preference Indicator	
96764	Phenol, 2,2-bis(1,1-dimethylethyl)-	141,345	Y	
732263	Phenol, 2,4,6-tris(1,1-dimethylethyl)-	92,207		
599644	Phenol, 4-(1-methyl-1-phenylethyl)-	22,555,351	Y	
25154523	Phenol, nonyl-	6,077		
92842	Phenothiazine	10,351	Y	
90437	Phenylphenol, o-	NA		
298022	Phorate	324,633		
75445	Phosgene	230,154		
88891	Picric acid	NA	Y	
5468757	Pigment yellow 14	12	Y	
1336363	Polychlorinated biphenyls	69,671		
N590	Polycyclic aromatic compounds	161,017		
9003536	Polystyrene	13,022	Y	
129000	Pyrene	29,536		
1929824	Pyridine, 2-chloro-6-(trichloromethyl)-	NA		
7782492	Selenium	81,355		
7440224	Silver	907,900		
122349	Simazine	NA		
13071799	Terbufos	234,457		
127184	Tetrachloroethylene	19,997,973		
961115	Tetrachlorvinphos	NA		
59669260	Thiodicarb	NA		
137268	Thiram	151		
2303175	Triallate	NA		
56359	Tributyltin oxide	NA		
79016	Trichloroethylene	8,424,720		
1582098	Trifluralin	5,236		
639587	Triphenyltin chloride	NA		
1120214	Undecane	7	Y	
7440622	Vanadium	2,068		
7440666	Zinc	17,671,084		
<i>Total Chemicals in Matrix</i>		156		

NA=not available

Quantity calculated by summing across waste quantities for individual PBT chemicals

**Table 2b. National Hazardous Waste Constituent Survey (NHWCS):  
Number of Waste Handlers**

NHWCS Facilities			
CAS Number	Chemical Name	Constituent Survey Facilities	Data Preference Indicator
630206	1,1,1,2-Tetrachloroethane	5	
71556	1,1,1-Trichloroethane	48	
79345	1,1,2,2-Tetrachloroethane	9	
75343	1,1-Dichloroethane	11	
95943	1,2,4,5-Tetrachlorobenzene	3	
120821	1,2,4-Trichlorobenzene	6	
95501	1,2-Dichlorobenzene	27	
107062	1,2-Dichloroethane	32	
528290	1,2-Dinitrobenzene	NA	
541731	1,3-Dichlorobenzene	3	
99650	1,3-Dinitrobenzene	NA	
106467	1,4-Dichlorobenzene	12	
100254	1,4-Dinitrobenzene	NA	
25973551	2-(2'-Hydroxy-3',5'-(di-t-amyl)phenyl)benzotriazole	1	Y
119471	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	1	
95954	2,4,5-Trichlorophenol	4	
94757	2,4-D	6	
51285	2,4-Dinitrophenol	6	
79743	2,5-Di-(1,1-dimethylpropyl)hydroquinone	1	
99309	2,6-Dichloro-4-nitroaniline	NA	
128370	2,6-Di-tert-butyl-p-cresol	1	
99592	2-Methoxy-5-nitrobenzenamine	NA	Y
97563	2-Methyl-4-((2-methylphenyl)azo)benzenamine	NA	Y
91576	2-Methylnaphthalene	1	
91941	3,3'-Dichlorobenzidine	1	
119904	3,3'-Dimethoxybenzidine	NA	Y
20325400	3,3'-Dimethoxybenzidine dihydrochloride	NA	Y
60093	4-(Phenylazo)benzenamine	NA	
101144	4,4'-Methylenebis(2-chloroaniline)	1	Y
101779	4,4'-Methylenebisbenzenamine	2	Y
101688	4,4'-Methylenediphenyl isocyanate	1	
101804	4,4'-Oxybisbenzenamine	NA	
96695	4,4'-Thiobis(6-tert-butyl-m-cresol)	1	
101553	4-Bromophenyl phenyl ether	1	
106489	4-Chlorophenol	1	
7005723	4-Chlorophenyl phenyl ether	1	
83329	Acenaphthene	12	
208968	Acenaphthylene	3	Y
75070	Acetaldehyde	7	
107028	Acrolein	5	
79061	Acrylamide	6	

(continued)

**Table 2b. (continued)**

NHWCS Facilities			
CAS Number	Chemical Name	Constituent Survey Facilities	Data Preference Indicator
116063	Aldicarb	NA	
107186	Allyl alcohol	2	
7429905	Aluminum	3	
834128	Ametryn	NA	
120127	Anthracene	14	
7440360	Antimony	24	
7440382	Arsenic	50	
1912249	Atrazine	1	
569642	Basic green 4	NA	
1861401	Benefin	NA	
17804352	Benomyl	NA	
56038892	Benzenamine, N-(1-ethylpropyl)-3,4-dimethyl-	1	Y
191242	Benzo(g,h,i)perylene	1	Y
7440417	Beryllium	14	
117817	Bis(2-ethylhexyl)phthalate	21	
90948	Bis(4-(dimethylamino)phenyl)methanone	NA	Y
314409	Bromoacil	NA	
74839	Bromomethane	6	
1689992	Bromoxynil octanoate	NA	
85687	Butyl benzyl phthalate	5	
2832408	C.I. Disperse yellow 3	NA	Y
7440439	Cadmium	56	
1563662	Carbofuran	NA	
79118	Chloroacetic acid	NA	
67663	Chloroform	33	
5598130	Chlorpyrifos methyl	NA	
1897456	Chlorthalonil	1	
7440473	Chromium	74	
7440484	Cobalt	6	
7440508	Copper	16	
57125	Cyanide	37	
1861321	Dacthal	1	
1163195	Decabromodiphenyl oxide	NA	Y
78488	DEF	NA	
333415	Diazinon	NA	
132649	Dibenzofuran	2	
84742	Dibutyl phthalate	16	
115322	Dicofol	NA	
1675543	Diglycidal ether of Bisphenol A	1	Y
60515	Dimethoate	NA	
117840	Di-n-octyl phthalate	9	Y
122394	Diphenylamine	5	
298044	Disulfoton	2	

(continued)

**Table 2b. (continued)**

NHWCS Facilities			
CAS Number	Chemical Name	Constituent Survey Facilities	Data Preference Indicator
115297	Endosulfan	3	
1031078	Endosulfan sulfate	1	
959988	Endosulfan, alpha-	2	
33213659	Endosulfan, beta-	1	
106934	Ethylene dibromide (EDB)	2	
75218	Ethylene oxide	3	
2164172	Fluometuron	NA	
206440	Fluoranthene	5	
86737	Fluorene	13	
58899	gamma-hexachlorocyclohexane	8	
76448	Heptachlor	6	
1024573	Heptachlor epoxide	3	
118741	Hexachlorobenzene	11	
87683	Hexachlorobutadiene	12	
319846	Hexachlorocyclohexane, alpha-	4	
319857	Hexachlorocyclohexane, beta-	3	Y
319868	Hexachlorocyclohexane, delta-	4	
77474	Hexachlorocyclopentadiene	4	
67721	Hexachloroethane	9	
74908	Hydrocyanic acid	5	
74884	Iodomethane	2	Y
7439921	Lead	63	
330552	Linuron	NA	
7439965	Manganese	7	
7439976	Mercury	46	
72435	Methoxychlor	4	
298000	Methyl parathion	2	
75092	Methylene chloride	55	
91203	Naphthalene	31	
7440020	Nickel	49	
54115	Nicotine <sup>a</sup>	NA	Y
98953	Nitrobenzene	27	
111659	Octane	2	
42874033	Oxyfluorfen	NA	
56382	Parathion	NA	
40487421	Pendimethalin	2	
608935	Pentachlorobenzene	2	
82688	Pentachloronitrobenzene	NA	
87865	Pentachlorophenol	11	
85018	Phenanthrene	18	
108952	Phenol	42	
96764	Phenol, 2,2-bis(1,1-dimethylethyl)-	2	Y
732263	Phenol, 2,4,6-tris(1,1-dimethylethyl)-	1	

(continued)

**Table 2b. (continued)**

NHWCS Facilities			
CAS Number	Chemical Name	Constituent Survey Facilities	Data Preference Indicator
599644	Phenol, 4-(1-methyl-1-phenylethyl)-	1	Y
25154523	Phenol, nonyl-	1	
92842	Phenothiazine	1	Y
90437	Phenylphenol, o-	NA	
298022	Phorate	2	
75445	Phosgene	2	
88891	Picric acid	NA	Y
5468757	Pigment yellow 14	1	Y
1336363	Polychlorinated biphenyls	3	
N590	Polycyclic aromatic compounds	NA	
9003536	Polystyrene	1	Y
129000	Pyrene	17	
1929824	Pyridine, 2-chloro-6-(trichloromethyl)-	NA	
7782492	Selenium	34	
7440224	Silver	44	
122349	Simazine	NA	
13071799	Terbufos	1	
127184	Tetrachloroethylene	46	
961115	Tetrachlorvinphos	NA	
59669260	Thiodicarb	NA	
137268	Thiram	1	
2303175	Triallate	NA	
56359	Tributyltin oxide	NA	
79016	Trichloroethylene	46	
1582098	Trifluralin	1	
639587	Triphenyltin chloride	NA	
1120214	Undecane	1	Y
7440622	Vanadium	6	
7440666	Zinc	23	
<i>Total Chemicals in Matrix</i>		156	

NA=not available

**Table 3. Biennial Reporting System (BRS): Quantity of Waste and Number of Generators Associate with Each Chemical**

Wastes in Short Tons						
CAS Number	Chemical Name	WasteWater	% WasteWater	NonWasteWater	TotalWastes	Facility Count
630206	1,1,1,2-Tetrachloroethane	66,911,341	95%	3,893,415	70,804,756	9,795
71556	1,1,1-Trichloroethane	75,057,126	95%	4,351,116	79,408,242	11,363
79345	1,1,2,2-Tetrachloroethane	59,438,846	95%	3,394,624	62,833,469	5,964
75343	1,1-Dichloroethane	48,641,269	93%	3,486,308	52,127,577	7,602
95943	1,2,4,5-Tetrachlorobenzene	48,641,269	93%	3,895,281	52,536,551	9,766
120821	1,2,4-Trichlorobenzene	61,445,492	95%	3,395,457	64,840,948	5,914
95501	1,2-Dichlorobenzene	79,723,864	95%	4,111,189	83,835,053	11,459
107062	1,2-Dichloroethane	85,344,452	95%	4,374,621	89,719,073	11,214
541731	1,3-Dichlorobenzene	47,157,520	95%	2,704,802	49,862,323	3,284
99650	1,3-Dinitrobenzene	7,082	67%	3,509	10,591	8
106467	1,4-Dichlorobenzene	47,804,234	95%	2,486,948	50,291,182	785
100254	1,4-Dinitrobenzene	47,155,428	96%	2,221,395	49,376,823	103
95954	2,4,5-Trichlorophenol	47,161,573	94%	3,097,684	50,259,258	4,413
94757	2,4-D	48,574,370	93%	3,615,991	52,190,361	1,349
51285	2,4-Dinitrophenol	47,870,180	96%	2,246,728	50,116,909	225
91941	3,3'-Dichlorobenzidine	15,685	78%	4,308	19,993	19
119904	3,3'-Dimethoxybenzidine	22,981	86%	3,743	26,724	28
101144	4,4'-Methylenebis(2-chloroaniline)	47,157,429	94%	3,063,978	50,221,407	4,319
101553	4-Bromophenyl phenyl ether	47,177,584	95%	2,224,206	49,401,791	119
83329	Acenaphthene	47,159,514	84%	8,971,431	56,130,945	283
208968	Acenaphthylene	47,159,537	94%	2,745,383	49,904,920	244
75070	Acetaldehyde	137,957	36%	243,438	381,395	96
107028	Acrolein	47,157,432	95%	2,223,922	49,381,354	209
79061	Acrylamide	5,156,457	61%	3,259,395	8,415,852	181
116063	Aldicarb	15,808	80%	3,913	19,721	25
309002	Aldrin	47,157,429	95%	2,224,085	49,381,514	131
107186	Allyl alcohol	39,517,888	97%	1,402,986	40,920,874	8,845
120127	Anthracene	50,758,721	94%	3,169,371	53,928,093	549
7440360	Antimony	87,565,950	93%	6,502,324	94,068,274	12,112
7440382	Arsenic	87,664,838	93%	6,674,320	94,339,158	12,571
17804352	Bonomyl	80,758	74%	28,773	109,530	19
191242	Benzo(g,h,i)perylene	47,155,673	95%	2,313,468	49,469,140	128

(continued)

**Table 3. (continued)**

Wastes in Short Tons						
CAS Number	Chemical Name	WasteWater	% WasteWater	NonWasteWater	TotalWastes	Facility Count
7440417	Beryllium	83,339,625	93%	6,501,903	89,841,528	12,109
117817	Bis(2-ethylhexyl)phthalate	59,693,887	85%	10,816,672	70,510,558	7,886
74839	Bromomethane	47,177,714	94%	2,969,501	50,147,215	148
85687	Butyl benzyl phthalate	47,157,593	93%	3,416,639	50,574,232	7,606
7440439	Cadmium	92,154,000	93%	6,753,505	98,907,505	13,354
1563662	Carbofuran	81,094	75%	26,837	107,931	20
67663	Chloroform	85,236,060	95%	4,411,825	89,647,885	11,370
7440473	Chromium	112,133,735	88%	14,666,984	126,800,719	13,588
7440508	Copper	83,339,378	93%	6,439,544	89,778,922	12,134
57125	Cyanide	59,027,670	74%	21,143,064	80,170,734	10,577
84742	Dibutyl phthalate	54,590,784	85%	9,634,763	64,225,547	383
60515	Dimethoate	6,788	62%	4,094	10,882	39
117840	Di-n-octyl phthalate	47,177,671	92%	3,889,430	51,067,102	9,733
122394	Diphenylamine	49,297,471	95%	2,384,042	51,681,514	125
298044	Disulfoton	47,157,556	95%	2,224,474	49,382,029	128
115297	Endosulfan	15,768	80%	3,875	19,643	46
1031078	Endosulfan sulfate	47,157,512	95%	2,224,166	49,381,678	140
959988	Endosulfan, alpha-	47,157,512	95%	2,224,166	49,381,678	140
33213659	Endosulfan, beta-	47,157,512	95%	2,224,166	49,381,678	140
106934	Ethylene dibromide (EDB)	47,177,584	95%	2,365,148	49,542,732	147
75218	Ethylene oxide	61,807,031	94%	3,634,047	65,441,078	7,731
206440	Fluoranthene	47,275,781	95%	2,335,609	49,611,390	174
86737	Fluorene	50,789,083	95%	2,725,754	53,514,837	861
76448	Heptachlor	47,178,023	93%	3,456,348	50,634,371	1,244
1024573	Heptachlor epoxide	47,178,023	95%	2,225,594	49,403,616	179
118741	Hexachlorobenzene	50,074,070	96%	2,344,704	52,418,774	247
87683	Hexachlorobutadiene	48,652,348	95%	2,338,564	50,990,912	214
319846	Hexachlorocyclohexane, alpha-	47,157,453	95%	2,266,141	49,423,595	288
319857	Hexachlorocyclohexane, beta-	47,157,453	95%	2,266,141	49,423,595	288
319868	Hexachlorocyclohexane, delta-	47,157,453	95%	2,266,141	49,423,595	288
58899	Hexachlorocyclohexane, gamma-	49,911,347	93%	3,479,946	53,391,293	1,327
77474	Hexachlorocyclopentadiene	48,657,739	95%	2,305,186	50,962,925	137

(continued)

**Table 3. (continued)**

Wastes in Short Tons						
CAS Number	Chemical Name	WasteWater	% WasteWater	NonWasteWater	TotalWastes	Facility Count
67721	Hexachloroethane	48,660,587	94%	3,221,488	51,882,075	4,367
74908	Hydrocyanic acid	5,354,667	63%	3,135,297	8,489,964	33
74884	Iodomethane	47,252,867	96%	2,224,515	49,477,381	160
7439921	Lead	101,097,118	86%	16,731,044	117,828,162	14,622
7439976	Mercury	89,650,691	93%	6,550,837	96,201,528	12,718
72435	Methoxychlor	48,427,477	91%	4,996,231	53,423,708	10,179
298000	Methyl parathion	47,174,181	95%	2,224,908	49,399,089	127
75092	Methylene chloride	75,154,251	95%	4,281,576	79,435,827	11,349
91203	Naphthalene	63,640,548	84%	11,851,248	75,491,795	11,264
7440020	Nickel	85,950,775	86%	13,562,738	99,513,512	12,165
54115	Nicotine	39,413,739	100%	4,488	39,418,227	110
98953	Nitrobenzene	77,753,038	95%	4,451,509	82,204,548	11,317
56382	Parathion	47,157,512	95%	2,224,115	49,381,626	139
608935	Pentachlorobenzene	48,641,269	95%	2,386,480	51,027,750	147
82688	Pentachloronitrobenzene	47,157,440	95%	2,224,892	49,382,333	129
87865	Pentachlorophenol	47,348,750	95%	2,486,807	49,835,557	499
85018	Phenanthrene	47,296,049	82%	10,393,601	57,689,650	3,512
108952	Phenol	77,139,183	86%	12,946,328	90,085,511	12,034
298022	Phorate	47,194,210	95%	2,224,488	49,418,698	123
75445	Phosgene	6,788	65%	3,602	10,391	26
1336363	Polychlorinated biphenyls	65,382,754	94%	4,130,719	69,513,472	11,211
129000	Pyrene	47,296,021	83%	9,813,173	57,109,193	376
7782492	Selenium	85,894,631	93%	6,472,458	92,367,089	12,291
7440224	Silver	85,550,956	93%	6,544,743	92,095,699	12,591
127184	Tetrachloroethylene	77,685,272	95%	4,407,402	82,092,674	12,492
59669260	Thiodicarb	1	0%	2,287	2,287	7
137268	Thiram	14,084	78%	4,042	18,126	43
2303175	Triallate	1	0%	2,575	2,576	7
79016	Trichloroethylene	75,310,182	94%	4,433,157	79,743,340	11,742
7440622	Vanadium	83,339,378	93%	6,722,442	90,061,820	12,106
7440666	Zinc	83,339,378	93%	5,913,681	89,253,058	12,069

## **Appendix E**

### **Processing of TRI Data for Evaluation of Quantity And Prevalence Criteria**

## **Appendix E**

### **Processing of TRI Data For Evaluation of Quantity And Prevalence Criteria**

This section describes how the TRI data was processed in order to generate the quantity data used for the PBT chemical screening and ranking. Data processing was conducted to 1) ensure that valid data were used for all data elements, 2) to screen records to eliminate facilities unlikely to have reported chemicals in RCRA wastes, and 3) to screen data to generate the quantity data for those chemical wastes that were most likely to be relevant to the RCRA program. These steps are described below. The table and figure at the end of this section summarize the data elements included in the TRI data analysis.

#### **E.1 Processing Data Elements**

Data elements for chemical quantities in the Form R may be entered as a number or as a letter signifying chemical quantities within specified ranges (e.g. 0-10 pounds, 10-500 pounds, etc.). Ranges were converted to single values by assuming the actual quantity was equal to the average of the lower and upper end of the range (e.g. a 0-10 pound range would be converted to 5 pounds, a 10-500 pound range would be converted to 255 pounds, and so forth). While this is only an estimate, the error introduced is small since the one would expect over- and under-estimates to cancel out to some degree in overall totals. In addition, the total quantity associated with reported ranges is small compared to the total amount of chemical quantities reported.

#### **E.2 Screening to Eliminate Non-Relevant Facilities**

Form R for facilities that did not report a RCRA ID Number (TRI data element 4.8) were eliminated on the basis that facilities generating RCRA-relevant waste in significant quantities would have a RCRA ID number. Since facilities with RCRA ID numbers may generate chemicals in wastes that are not RCRA-relevant, including all Form R data from all facilities with RCRA ID numbers will over-estimate the quantity of chemical that is in RCRA-relevant waste. Since it would not be possible to determine which specific portion of a reported chemical quantity was in a RCRA-relevant waste, for purposes of this analysis it was considered acceptable to overestimate the RCRA quantity.

#### **E.3 Screening to Identify RCRA-Relevant Waste Forms**

Data elements in the Form R considered relevant to RCRA wastes were summed together to generate an estimate of the RCRA-relevant portion of chemicals generated. Certain data were also excluded to avoid double-counting of chemical quantities. In general the Form R data elements that were included in generating the quantity estimates were the data elements for recycling, energy recovery, and treatment (elements 8.2 - 8.7), for release to Underground Injection Control (UIC) well (element 5.4), and for release/disposal to land (elements 5.5.1 - 5.5.4 and 6.2). UIC quantities were only included if a UIC number was also listed for the facility, since Class I wells that can accept RCRA wastes are required to have a UIC number. Data in element

6.2 (transfers to other off-site locations) was only included if the chemical was indicated as being sent for disposal. Including data from section 6.2 for chemicals sent off-site for treatment, recycling, etc. would potentially double-count quantities already included in Section 8 data. Similarly, Section 6.1 data for releases to POTWs were not included, as this would overlap with releases to off-site treatment.

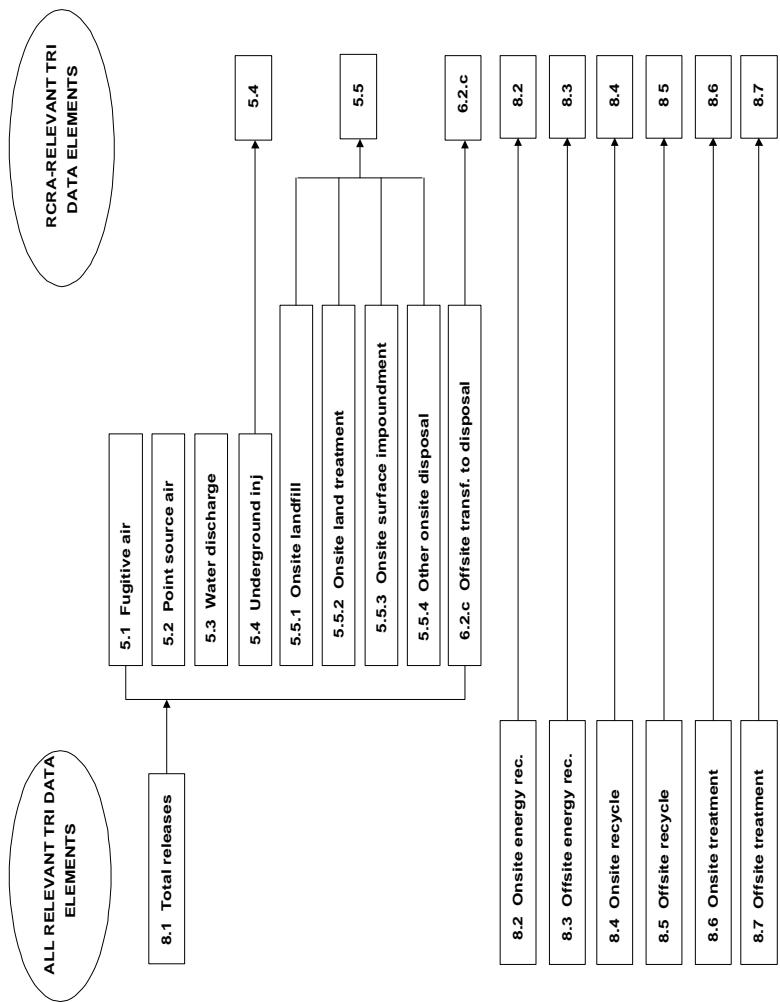
Section 8.8 data relating to releases from remedial activities and catastrophic event releases were also not included in the quantity totals. This was because the focus was on wastes amenable to source reduction. While to a certain degree one-time releases may be amenable to reduction through waste minimization practices such as spill prevention programs, it was decided that these wastes would not be included in the quantity calculations.

#### **E.4 Quantities and Facility Counts By Chemical**

Once range information had been converted to quantities and the facilities without RCRA ID numbers were removed from the data set, the data elements identified in Section E.3 above were summed within each record and then across records by chemical to generate data for the chemical quantity. Facility counts for each chemical were generated by counting the number of Form Rs for the chemical with unique facility ID numbers.

### TRI Data Elements Incorporated into Quantity Calculation

	All Production-Related TRI Elements	Screens 1 & 2	Screen 3: RCRA-Relevant Waste Forms
<b>TRI Chemicals in Waste</b>	TRI data elements 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 5.1, 5.2, 5.3, 5.4, 5.5, 6.2c (disposal only)	Screen consists of selecting the Form R responses relating to listed TRI chemicals that appear as constituents in RCRA wastes.	TRI data elements 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 5.4, 5.5, 6.2c (disposal only)
<b>Total Quantity Released / Disposed of</b>	TRI data elements 5.1, 5.2, 5.3, 5.4, 5.5, 6.2c (disposal only)		TRI data elements 5.4, 5.5, 6.2c (disposal only)
<b>Recycled Onsite</b>	TRI data element 8.4		TRI data element 8.4
<b>Recycled Offsite</b>	TRI data element 8.5		TRI data element 8.5
<b>Energy Recovery Onsite</b>	TRI data element 8.2		TRI data element 8.2
<b>Energy Recovery Offsite</b>	TRI data element 8.3		TRI data element 8.3
<b>Treated Onsite</b>	TRI data element 8.6		TRI data element 8.6
<b>Treated Offsite</b>	TRI data element 8.7		TRI data element 8.7
<b>Underground Injections</b>	TRI data element 5.4		TRI data element 5.4
<b>Releases to Land</b>	TRI data element 5.5		TRI data element 5.5



**Figure 1. Mapping from 1995 TRI data elements to RCRA-relevant waste forms.**

## **Appendix F**

### **Processing of BRS Data for Evaluation of Quantity and Prevalence Criterion**

## Appendix F

### PROCESSING OF BRS DATA FOR EVALUATION OF QUANTITY AND PREVALENCE CRITERION

Reference: Draft Report *Measuring Waste Minimization: EPA's Interim Measure For Tracking Progress Toward National Goals.* (U.S. EPA, 1997a)

Through the use of *Biennial Reporting System (BRS)* database and the chemical- RCRA waste code crosswalk, the quantity of RCRA waste and the number of generators associated with each chemical in 1995 was determined. BRS is a national system that collects data on the generation, management, and minimization of hazardous waste. BRS captures data from large quantity generators (LQGs) of hazardous waste and data on waste management practices from treatment, storage, and disposal facilities. Facilities report their data on several different forms, including:

- Form GM (waste generation and management)
- Form WR (waste received from off site)
- Form PS (waste treatment, disposal, and recycling facilities)
- Form IC (identification and certification)

For this analysis, data were obtained from the GM form only. Facilities provide data to EPA on even years about the hazardous waste activities of the previous year. EPA produces Biennial Reports to communicate the findings of these data collection efforts to the public, government agencies, and the regulated community. The Biennial Reports are available at <http://www.epa.gov/epaoswer/hazwaste/data/index.htm>

The BRS contains information on hazardous wastestreams, which are classified by RCRA waste codes and not by chemicals. For this reason, the *Chemical-Waste Code Crosswalk* (obtained from the Waste Minimization Prioritization Tool (WMPT)) was used to identify which wastestreams reported under the BRS are likely to contain the PBT chemicals of interest. The Chemical-Waste Code Crosswalk, developed as part of the Waste Minimization Prioritization Tool, provides a means of translating between the WMPT chemicals and the wastestreams that are likely to contain those chemicals. It consists of a series of tables, separated into wastewater and non-wastewater, with chemical names and CAS numbers listed on one axis and the RCRA hazardous waste codes listed on the other axis.

Once a wastestream reported under BRS is linked to a particular chemical, the entire wastestream quantity is linked to that chemical.

**EXAMPLE:** The Crosswalk links benzene to non-wastewater wastestreams reported under the following RCRA waste codes: D018, F001, F002, F003, F004, F005, F024,

F025, F037, F038, F039, U019, K011, K013, and K014. BRS waste streams having one or more of these waste codes reported in 1995 had a total waste stream quantity of xx tons of waste (non-wastewater). Therefore, this analysis considered xx tons of non-wastewater waste to contain benzene for 1995.

A few of the Candidate Chemical List chemicals did not appear in the BRS data, and therefore no corresponding waste codes are mapped for those chemicals in the Crosswalk. In these cases, scoring for the BRS factors were not possible. For these chemicals, the Quantity and Prevalence subcriterion scores was developed based solely on the TRI/NHWCS data.

## **METHODOLOGY FOR GENERATING DATA**

This section describes the steps involved in converting the BRS data into a form useful for analyzing waste minimization and creating the tables shown in Appendix A.

### **Accessing BRS Data**

Raw data from reports submitted by facilities under the BRS serve as the starting point. These data consist of ASCII files in a prescribed, standard format (available to the public at <http://www.epa.gov/epaoswer/hazwaste/data>). These tables, along with the Crosswalk tables, were imported into an MS Access relational database for all further analysis.

### **Restricting Data to Wastes at the Generation Source**

Data were restricted to wastes generated at the source. To make this determination, the "origin code" for the waste as reported on Form GM were reviewed. The origin codes are:

<b>Code</b>	<b>Origin</b>
1	The hazardous waste was generated on site from a production process or service activity (including off-specification or spent chemicals)
2	The hazardous waste was the result of a spill cleanup, equipment decommissioning, or other remedial cleanup activity.
3	The hazardous wastestream was derived from the management of a non-hazardous wastestream.
4	The hazardous waste was received from off site and was not recycled or treated on site.
5	The hazardous waste was a residual from the onsite treatment, disposal, or recycling of a previously existing hazardous wastestream.

Only those wastes with a origin code of 1 or 3 were included in the analysis, because these pertain to wastes generated by a production process or service activity

### **Converting Data to a Common Measure**

The quantities available from the BRS data that were used for this analysis include quantity

generated (Form GM, Section II, Box B), quantity recycled (Form GM, Section IV, Box D), source reduction quantity (Form GM, Section IV, Box F), and quantity received (Form WR, Box E). These quantities can be reported in mass units (pounds, short tons, kilograms, metric tonnes) or volumetric units (gallons, liter, cubic yards). Therefore, these quantities were converted quantities into a common unit of measure—short tons.

### **Defining Each Wastestream**

Once the raw data are converted to a consistent unit of measure, each wastestream was defined in terms of the form of the wastestream (wastewater or non-wastewater), the applicable waste codes, and the chemicals likely to be present in the wastestream. This information is determined for each wastestream as described below.

Once these characteristics are determined for each wastestream, the distinct waste streams were determined for each chemical in the target list (i.e., each waste stream would only be counted once for a given chemical, regardless of how many form codes might indicate the presence of that chemical).

#### *Determining Whether the Waste Is a Wastewater or Non-Wastewater*

The Crosswalk Tables provide information that enables specific chemicals to be related to RCRA form codes in either wastewater or non-wastewater wastestreams. To determine which form codes should be used, it is necessary to categorize the waste into either wastewater or non-wastewater streams. However, the BRS Reporting Forms do not include a data element where the facility specifically identifies wastestreams as wastewater or non-wastewater. In the absence of such information, other data elements were examined to classify the wastestreams. The methodology for identifying wastewaters and non-wastewater wastestreams includes considering the waste form code, on-site handling codes, and waste descriptions reported on Form GM. Because the BRS data do not specify the chemical composition of the waste, the determination of whether a waste is wastewater or not is based on whether the waste is primarily aqueous (inorganic) in nature.

### **Developing Waste Quantities**

The classification of wastestreams into wastewater and non-wastewater streams was only done for the purpose of selecting the correct relationship between RCRA waste code and chemical. For a given chemical of concern, the total quantities of wastewater and non-wastewater streams were combined to obtain a total waste quantity. The resulting total waste quantity was used in the evaluation of the Quantity subcriterion.

The methodology for categorizing waste streams as wastewater or non-wastewater is described below:

step 1: Wastewater streams were determined as those with:

- waste form codes between B100 and B199; or
- waste form codes of B201, B202, B203, B204, B205, B207, B212, B219 and on-site handling codes of any of the following: between M071 and M079, between M081 and M085, between M091 and M094 or equal to M089, M099, M121, M134, M135, M136; or
- waste form codes of B201, B202, B203, B204, B205, B207, B212, B219 and on-site handling codes of M131, M133, or M137 with the following words (or part of words) in their waste description: leachate, water, rain, cooling tower, blow down and excluding any waste with the word (or part of word) acid in its waste description.

step 2: All other wastestreams were designated as non-wastewaters.

#### *Determining Which Wastestreams May Contain Particular Chemicals*

Using the Chemical-Waste Code Crosswalk, the following steps were performed:

- Step One: Based on whether the wastestream is a wastewater or non-wastewater, the appropriate Crosswalk tables are referenced.
- Step Two: For each chemical on the Candidate Chemical List, the distinct (unique) wastestreams which have waste codes that were identified in the Crosswalk tables as containing that chemical were identified. For example, non-wastewater wastestreams having any of the following waste codes: D018, F001, F002, F003, F004, F005, F024, F025, F037, F038, F039, U019, K011, K013, and K014 would be considered as having benzene.

#### *Determining the Quantities Associated with a Particular Chemical*

If a wastestream contains any of the waste codes identified by the Crosswalk, the total quantity of the waste stream generated is linked to that chemical. For example, if a non-wastewater wastestream is reported as a D018, F001, F002, F003, F004, F005, F024, F025, F037, F038, F039, U019, K011, K013, or K014 waste, then the entire wastestream quantity is linked to benzene. If a wastestream contains more than one waste code linked to a particular chemical, it is counted only once for that chemical, so that double-counting does not occur.

## **Appendix G**

### **EPA and International PBT Chemical Priority Lists**

## Great Lakes Bioaccumulative Chemicals of Concern List:

Constituent	CAS Number
1,2,3,4-Tetrachlorobenzene	634662
1,2,4,5-Tetrachlorobenzene	95943
2,3,7,8-TCDD; dioxin	1746016
DDD	72548
DDE	72559
DDT	50293
alpha-Hexachlorocyclohexane; alpha-BHC	319846
beta-Hexachlorocyclohexane; beta-BHC	319857
Chlordane	57749
delta-Hexachlorocyclohexane; delta-BHC	319868
Dieldrin	60571
Hexachlorobenzene	118741
Hexachlorobutadiene; Hexachloro-1,3-butadiene	87683
Hexachlorocyclohexanes; BHCs	NA
Lindane; gamma-Hexachlorocyclohexane; gamma-BHC	58899
Mercury	7439976
Mirex	2385855
Octachlorostyrene	29082744
PCBs; Polychlorinated Biphenyls	1336363
Pentachlorobenzene	608935
Photomirex	39801144
Toxaphene	8001352

United States Environmental Protection Agency (USEPA), 1997q. Title 40 -- Protection of Environment; Chapter I -- Environmental Protection Agency; Part 132 Water Quality Guidance for the Great Lakes System, Section 132.6, Table 6.

**US-Canada Binational Agreement Level I List:**

Constituent	CAS Number
aldrin	309002
Alkyl-lead	
benzo(a)pyrene	50328
chlordan	57749
DDD	72548
DDE	72559
DDT	50293
dieldrin	60571
hexachlorobenzene	118741
mercury and compounds	7439976
mirex	2385855
octachlorostyrene	29082744
PCBs	1336363
PCDD (Dioxins)	NA
PCDF (Furans)	NA
toxaphene	8001352

**US-Canada Binational Agreement Level II List:**

Constituent	CAS Number
1,4-dichlorobenzene	106467
3,3'-dichlorobenzidine	91941
4,4'-methylenebis(2-chloroaniline)	101144
cadmium and cadmium compounds	7440439
dinitropyrene	
endrin	72208
heptachlor	76448
heptachlor epoxide	1024573
hexachlorobutadiene and hexachloro-1,3-butadiene	87683
hexachlorocyclohexane	
PAHs as a group, including anthracene, benzo(a)anthracene, benzo(ghi)perylene, perylene, and phenanthrene	NA
pentachlorobenzene	608935
pentachlorophenol	87865
1,2,3,4-tetrachlorobenzene	634662
1,2,4,5-tetrachlorobenzene	95943
tributyl tin	688733

United States Environmental Protection Agency (EPA), 1997p. Great Lakes Binational Toxics Strategy. Great Lakes National Program Office, Chicago, IL.

### **Great Waters Pollutants of Concerns List:**

<b>Constituent</b>	<b>CAS Number</b>
Cadmium and cadmium compounds	7440439
Chlordane	57749
DDE	72559
DDT	50293
Dieldrin	60571
Hexachlorobenzene (HCB)	118741
Hexachlorocyclohexane ( -HCH)	
Lead and lead compounds	7439921
Lindane	58899
Mercury and mercury compounds	7439976
Nitrogen compounds	7727379
Polychlorinated biphenyls (PCBs)	1336363
Polycyclic organic matter (POM)	
Tetrachlorodibenzo- -dioxin, 2,3,7,8- (TCDD;; dioxins)	1746016
Tetrachlorodibenzofuran, 2,3,7,8- (TCDF; furans)	30402143
Toxaphene	8001352

United States Environmental Protection Agency (EPA), 1997o. Deposition of Air Pollutants to the Great Waters, Second Report to Congress. Office of Air Quality and Planning Standards, Research Triangle Park, NC. EPA/453/R-97/011.

### **International Persistent Organic Pollutants List:**

<b>Chemical Name</b>	<b>CAS Number</b>
Aldrin	309002
Chlordane	57749
DDT	50293
Dieldrin	60571
Endrin	72208
HCB	118741
Heptachlor	76448
Mirex	2385855
PCBs	1336363
PCDD	
PCDF	
Toxaphene	8001352

International Persistent Organic Pollutants List found at <http://irptc.unep.ch/pops/>.